Strengthening gender research to improve girls' and women's education in Africa

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STRENGTHENING GENDER RESEARCH IN EDUCATION IN AFRICA

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Introduction

Strengthening gender research in education in Africa

The Universal Declaration of Human Rights ratified in 1948 by the United Nations elevated education as a basic
human right. All sub-Saharan countries endorsed the Declaration, as they did the Education for All (EFA) agenda of
1990, and that of the World Education Forum (WEF) held in 2000, in Dakar, Senegal. The Millennium Development
Goals (MDGs) have been another instrument by which to address the provision of education at all levels to eliminate
gender disparities by 2005 and to achieve gender equality by 2015.

However, despite the dedication and commitment of the international community to address gender issues in
education at all levels, gender disparity continues to be a clear reminder of the failed objectives and missed targets
set by the international conferences, conventions and declarations that many sub-Saharan African countries
ratified.

With the exception of only a few countries, the use of research-based evidence in the integration and
institutionalisation of gender issues in sub-Saharan Africa has remained a serious challenge. 1 When policies
undermine research that could generate reliable, up-to-date data on gender in African education, this contributes
to the disregard of girls’ basic rights and of approaches and strategies that support girls and women's rights in
education. The weakness of evidence-based interventions that target specific women’s issues has led to a vicious
circle, in which many communities across sub-Saharan Africa continue to produce poorly educated women, who in
turn bring forth generations of poorly educated girls.

FAWE recognises the necessity of investing in developing research to strengthen its advocacy and demonstration
work in education policy and practice. The link between research and application is paramount.

FAWE has thus committed to using evidence-based research not only to demonstrate to policy- and decision-
makers the high cost of ignoring women’s educational needs, but also to constructively engage and dialogue with
government, policy-makers and regional bodies to influence the adoption of approaches and strategies that can
help redress these negative effects.

In collaboration with researchers across Africa and with the support of the Norwegian Agency for Development
Cooperation (Norad), FAWE embarked on an initiative that seeks to contribute to the generation of new research
paradigms that can inform both educational policy and practice. We take this opportunity to thank Norad for its
financial support.

Through this applied research programme, FAWE’s objectives are to:

• generate reliable, up-to-date qualitative and quantitative data on gender in African education to
inform policy and practice in sub-Saharan; and
• support evidence-based advocacy initiatives by coordinating the publication of the work produced
by the researchers in the network, with a view to mobilising stakeholders to engage policy-makers
and practitioners based on research findings.

1Chege, F.N.; Sifuna, D.N. (2006), Girls’ and women’s education in Kenya: Gender perspectives and trends, Nairobi, UNESCO.
INTRODUCTION

With the aim of developing a network of gender researchers across the continent, FAWE reached out to researchers already contributing to the field of gender research in Africa to harness their expertise for the purposes of the initiative. A core group of highly experienced researchers from the following five national or regional institutions was constituted to contribute to the studies contained in this volume:

- The Association for Strengthening Higher Education for Women in Africa (ASHEWA), Zimbabwe
- The Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ), in collaboration with the University of Witwatersrand, Johannesburg, South Africa
- The Laboratoire Genre et Recherche Scientifique de l’IFAN, Cheikh Anta Diop University, Senegal
- The Institute for Gender Studies, Addis Ababa University, Ethiopia
- The Programme d’analyse des systèmes de la Conférence des ministres de l’Éducation ayant le français en partage (PASEC/CONFEMEN), Senegal

These partners conducted research on the relationship between gender, including that of instructors/administrators, and achievement in primary schools in selected English-speaking and French-speaking countries1: gender-related barriers to female participation in secondary and tertiary education in Lesotho, Swaziland and Zimbabwe; patterns of admission and success of female students in higher education in Ethiopia; and the economic impact of steering girls towards short-term courses in Senegalese universities.

The teams constituted by FAWE’s research partners included at least two research mentees who were personally guided by the lead researcher and, where necessary, trained in data analysis, report writing and presentation of results. This mentoring component will contribute to building research capacity among African women on gender in education in Africa and encourage more women into the research field.

FAWE is proud to present the findings that have emerged from the first phase of research. These important findings validate our advocacy work targeting discrimination against female students at all levels of education in physical and social forms. The studies reveal that a significant number of girls who enter either primary, secondary or higher education institutions do not succeed in completing their studies; quite a significant number of them fail and are dismissed because of various types of problems they encounter. The educational environment in many African countries is simply not gender-responsive or gender-friendly.

These findings reinforce the urgency to strengthen gender research on education in Africa in order to generate new, specific evidence that can inform policies and practices. A second volume of research papers will be published in 2012 to further stimulate reflection, dialogue and action in favour of gender equality in education in sub-Saharan Africa.

FAWE Executive Director

Oley Dibba-Wadda

Acknowledgements

FAWE would like to acknowledge the following people for their invaluable contribution and support to its research initiative in general and this publication in particular.

Financial support and guidance

Dr. Anne Wettesen, Senior Advisor, Education and Research Department, Norad

Anne Wettesen was instrumental in facilitating and drafting the funding agreement between FAWE and Norad and provided guidance on procedure. Norad has supported FAWE’s work through a close funding partnership since 1993.

Research teams

Association for Strengthening Higher Education for Women in Africa (ASHEWA)

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Fay Chung is one of the founding members of FAWE. She has served in many capacities in the education sector, including head of educational planning in Zimbabwe, head of the UNICEF Education Cluster in New York and director of the UNESCO International Institute for Capacity Building in Africa. She is currently senior technical advisor to the Minister of Education in Namibia.

Dr. Margaret Rukuni, Lead researcher Zimbabwe

Margaret Rukuni is a researcher and gender activist at the Women’s University in Africa and UNIFEM. She has worked at the Zimbabwe Open University as researcher, institutional research director, acting chair for social sciences, programme developer and counselling specialist. She has also been a lecturer at the University of Zimbabwe.

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Ms Julia Pulane Lefoka and Dr. J. Thuli Nhlangatwa, were the lead researchers on the ASHEWA team for Lesotho and Swaziland respectively. Ms Ketsiwe Dlamini, Ms Sisana Simelane and Ms Futhi Nhlengethwa were all members of the Swaziland team as research mentees. Ms Elizabeth Chikwiri was one of the research mentees on the Zimbabwe team.

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1 PASEC and SACMEQ used existing regional statistical data to conduct their analyses.
and director of the university’s Laboratoire Genre et Recherche scientifique (gender and scientific research laboratory) which provides financial and technical support to female research students. She is a member of the FAWE Executive Committee.

Ms Lala Diagne, Ms Ngoye Gueye and Mr Kader Mane were the research mentees on the Labouratoire Genre team. They are all based in Senegal.

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Ms Sophia Sagna Diouf, Research mentee
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Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ)/ University of Witwatersrand

Dr Demus Makuwa, Acting Director, SACMEQ Co-ordinating Centre
Demus Makuwa has served as Senior Education Planner in the Directorate of Planning and Development of the Ministry of Education in Namibia. He has worked as a high school teacher, a college lecturer, and a community school manager. His research interests include educational policy analysis and school effectiveness studies. Dr Makuwa was instrumental in facilitating the research partnership between FAWE and the University of Witwatersrand for this project.

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<td>Association for the Development of Education in Africa</td>
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<td>ADBB</td>
<td>African Development Bank</td>
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<td>AIDS</td>
<td>Acquired immune deficiency syndrome</td>
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<td>ANSD</td>
<td>Agence Nationale de Statistique et de la Démographie (National Agency for Statistics and Demography)</td>
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<td>ASHEWA</td>
<td>Association for Strengthening Higher Education for Women in Africa</td>
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<tr>
<td>CEPAIRRED</td>
<td>Centre Pan-africain d’Études et de Recherches en Relations Internationales et en Education pour le Développement (Pan-African Studies and Research Center in International Relations and Education for Development)</td>
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<tr>
<td>CONFEMEN</td>
<td>Conférence des ministres de l’Éducation des pays ayant le français en partage (Conference of Ministers of Education of French-Speaking Countries)</td>
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<td>DANIDA</td>
<td>Danish International Development Agency</td>
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<td>DPRE</td>
<td>Direction de la Planification et de la Réforme de l’Éducation (Educational Planning and Reform Department)</td>
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<td>EFA</td>
<td>Education for All</td>
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<tr>
<td>ERNWACA</td>
<td>Educational Research Network for West and Central Africa</td>
</tr>
<tr>
<td>ESDFP</td>
<td>Education Sector Development Programme</td>
</tr>
<tr>
<td>GAD</td>
<td>Gender and Development</td>
</tr>
<tr>
<td>GER</td>
<td>Gross enrolment ratio</td>
</tr>
<tr>
<td>GPA</td>
<td>Grade point average</td>
</tr>
<tr>
<td>GPI</td>
<td>Gender Parity Index</td>
</tr>
<tr>
<td>FAWE</td>
<td>Forum for African Women Educationalists</td>
</tr>
<tr>
<td>FTI</td>
<td>Fast Track Initiative</td>
</tr>
<tr>
<td>HIV</td>
<td>Human immunodeficiency virus</td>
</tr>
<tr>
<td>IFAN</td>
<td>Institut Fondamental de l’Afrique Noire (African Institute of Basic Research)</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and communication technology</td>
</tr>
<tr>
<td>IGS</td>
<td>Institute for Gender Studies</td>
</tr>
<tr>
<td>IIEP</td>
<td>International Institute for Educational Planning</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Development Goal</td>
</tr>
<tr>
<td>MHTED</td>
<td>Ministry of Higher and Tertiary Education</td>
</tr>
<tr>
<td>MOE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>MOESAC</td>
<td>Ministry of Education, Sport, Arts and Culture</td>
</tr>
<tr>
<td>MOET</td>
<td>Ministry of Education and Training</td>
</tr>
<tr>
<td>NCC</td>
<td>National Curriculum Centre</td>
</tr>
<tr>
<td>NCN</td>
<td>Nazarene College of Nursing</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-governmental organisation</td>
</tr>
<tr>
<td>NORAD</td>
<td>Norwegian Agency for Development Cooperation</td>
</tr>
<tr>
<td>NSA</td>
<td>National Statistics Agency</td>
</tr>
<tr>
<td>NUST</td>
<td>National University of Science and Technology</td>
</tr>
<tr>
<td>OVC</td>
<td>Orphans and vulnerable children (Swaziland report)</td>
</tr>
<tr>
<td>PASEC</td>
<td>Programme d’Analyse des Systèmes Éducatifs de la CONFEMEN (Analysis Programme of the CONFEMEN Education Systems)</td>
</tr>
<tr>
<td>PTA</td>
<td>Parent-teacher association</td>
</tr>
<tr>
<td>SACMEQ</td>
<td>Southern and Eastern African Consortium for Monitoring Educational Quality</td>
</tr>
<tr>
<td>SADC</td>
<td>South African Development Community</td>
</tr>
<tr>
<td>SCOT</td>
<td>Swaziland College of Technology</td>
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<td>SES</td>
<td>Socio-economic status</td>
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<td>SME</td>
<td>Small and medium-sized enterprises</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
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<tr>
<td>TVET</td>
<td>Technical and vocational education and training</td>
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<td>UCAD</td>
<td>Université Cheikh Anta Diop (Cheikh Anta Diop University)</td>
</tr>
<tr>
<td>UGB</td>
<td>Université Gaston Berger de St. Louis (Gaston Berger University in St. Louis)</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>UNISA</td>
<td>University of South Africa</td>
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<td>UNISWA</td>
<td>University of Swaziland</td>
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<td>UPE</td>
<td>Universal primary education</td>
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<td>WEF</td>
<td>World Education Forum</td>
</tr>
<tr>
<td>WG-COMED</td>
<td>Working Group on Communication for Education and Development</td>
</tr>
<tr>
<td>WUA</td>
<td>Women’s University in Africa</td>
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Overview

Gender disparity in access, retention and performance within the education sector in sub-Saharan Africa serves as a reminder that the majority of African countries have not met the targets set by international conferences, conventions and declarations, in particular Millennium Development Goal number 2, which sought parity in enrolment in basic education. Today, more than half of out-of-school children in sub-Saharan Africa are girls1 and two-thirds of the illiterate population are women2.

Continuous advocacy is crucial to ensure that girls and women enjoy the same opportunities as their male counterparts to learn and be active and productive members of their societies. Without evidence-based interventions that specifically target women’s issues, the vicious circle of gender stereotypes that undermine girls’ and women’s participation in education will continue. Research on gender and education in Africa is severely limited, however. This creates serious challenges as regards using research evidence in integrating and institutionalising gender issues in education policy and practice. The majority of African universities still struggle in the area of gender research, while African governments face the practical challenges of adopting gender-responsive approaches to education.

Recognising the need for advocacy in favour of gender equality in education that is based on evidence, FAWE established a research initiative under the theme Strengthening gender research to improve girls’ and women’s education in Africa. Launched in 2009, the initiative seeks to enhance female education through the integration of gender in education policy and practice, using evidence from gender research conducted both on and by African women. One of the key components of the research initiative is the development of a network of experienced researchers across sub-Saharan Africa who are in a position to collectively set the agenda on gender and education. FAWE thus established partnerships with researchers from five national and regional institutions who undertook the studies that make up this volume. Their work under this initiative is summarised below.

Gender and academic achievement in primary education

PASEC/CONFEMEN (Analysis Programme of CONFEMEN Education Systems) carried out research on the relationship between the gender of instructors/administrators and girls’ achievement in reading and mathematics in primary schools in French-speaking West and Central Africa.

The PASEC/CONFEMEN study found that differentials in learning achievements exist between boys and girls and that these gaps widen throughout their school years. In grade 2, boys’ and girls’ results in French and mathematics tests were not significantly different, with boys performing significantly better than girls in mathematics only in Burkina Faso and Cameroon. In grade 5, however, girls scored lower than boys in mathematics in seven of 11 countries studied. Furthermore, classroom observations and interviews with teachers, administrators, students and parents showed that schools participate in reproducing gender stereotypes in two important ways – by assigning traditional roles to boys and girls; and through the schools’ “power structure” in which the majority of heads of school are male and most of the women teachers are concentrated in the lower education level. The research suggests that the school is an “instrument maintaining the social order” and these findings demonstrate the need for a strong gender component in teacher training at both pre-service and in-service level. Gender issues should also be given greater consideration in research work through gender-based comparison of pupils, teachers and principals.

The University of Wittwatersrand in Johannesburg, South Africa, in collaboration with SACMEQ, carried out two studies based on SACMEQ data collected in primary schools in Southern and Eastern Africa. The first study aimed at evaluating gender and educational quality while the second focused on the relationship between teacher quality and girls’ academic performance.

The SACMEQ/University of Wittwatersrand studies found that in literacy tests, girls lagged behind boys in all seven countries under study in the SACMEQ I phase of three studies except in Zimbabwe where girls performed marginally better than boys and in Mauritius where girls performed significantly better than boys. In the SACMEQ II phase of data collection, both literacy and mathematics test scores were assessed. Girls performed better in literacy tests in eight of the 14 countries studied, while boys outperformed girls in mathematics in nine of the 14 countries. In two thirds of the countries, girls’ mathematics scores were lower than their reading scores. Overall, however, not all countries revealed gender disadvantage in primary schooling and few patterns emerged in terms of geographical clusters and countries with similar histories. This suggests that issues of gender equity and schooling are localised and the unique context of each country must be considered.

As regards teacher quality and girls’ performance, a study of seven countries found that female teachers constituted less than half of grade 6 teachers of reading and mathematics. Overall, a higher proportion of stagnant teachers than male teachers had acquired secondary education or above but findings showed that contrary to general belief, male teachers dominated primary school teaching. They also had a relatively higher subject competency in mathematics and reading than female teachers based on school location. However, in some countries there was no difference in the performance of girls taught by female teachers with high academic qualifications and those taught by female teachers with low qualifications. This raises questions as to whether better qualified teachers necessarily improve the performance of students. Further research is needed to determine answers to this and other questions.

Gender disparities in access, participation and completion in secondary education

ASHWEA carried out a three-fold study on gender disparities in secondary and tertiary education in Lesotho, Swaziland and Zimbabwe. In Lesotho and Zimbabwe, the research team studied in secondary schools, particularly as regards science, mathematics and technology and high school drop-out due to pregnancy.

At secondary level in Lesotho, only about 35 per cent of secondary school-age children were enrolled but girls comprise more than half (56 per cent) of secondary school children. Nevertheless, gender biases still affect girls’ learning experience severely, particularly in science and mathematics and in both mixed schools and girls-only schools. Girls in Lesotho found science to be the most difficult subject, observing that women who went on to study science at university rarely succeed. Low self-esteem prevented girls from enjoying science subjects; parents were blamed for contributing to their daughters feeling threatened by mathematics; and male students believed that girls had no passion, little competency and insufficient confidence for science and mathematics. The study recommended bridging courses and after-class activities among other strategies to help female students succeed in these subjects.

In Swaziland, where girls account for 50 per cent of secondary school enrolment, the limited number of higher education institutions was found to discourage a spirit of learning at secondary level, with many school leavers aspiring to join the army or the police force rather than compete for the few places available for higher education. In addition, there is a high rate of drop-out of orphans, pregnant girls and other children in vulnerable situations. The research report on Swaziland calls for great efforts to address the plight of these children and to enable pregnant girls to continue their education.

Although Zimbabwe has domesticated the SADC Gender Protocol in Education which targets equal access to and retention at all levels of education, including vocational and non-formal education, major gender disparities exist at all secondary level. In contrast to the drop-out rate of 50 per cent from junior secondary enrolments in 2009 but only 42 per cent of upper secondary enrolments, suggesting a significant attrition rate before the final two years of secondary school and transition to tertiary education. Secondary schools sampled had no recognised gender policy or quota systems for girls. Furthermore, teachers in secondary schools were not aware of the government’s affirmative action policies.
to increase access to tertiary education for girls and as a result did not advise female students on how to benefit from these policies, further aggravating problems of transition.

As in Swaziland, school drop-out due to pregnancy is significant in Zimbabwe, with 71 per cent of students sampled knowing of at least one girl who had left school due to pregnancy, but only 17 per cent knowing of a school-age mother returning to school after giving birth. This indicates that sexual and reproductive health education does not receive sufficient attention in secondary school. The research suggests that an approach from a family and community perspective would have a positive impact.

Strategies for equity and academic success in tertiary education

In addition to research carried out by ASHEWA on tertiary education, IGS at Addis Ababa University conducted research on patterns of admission and of success of female students in higher education in Ethiopia. In Senegal, the Laboratoire Genre et Recherche Scientifique (Gender and Scientific Research Laboratory) at Cheikh Anta Diop University examined the economic impact of steering girls towards short-term courses at universities in the country.

Some positive developments at the tertiary level emerged from all these studies. In Lesotho, by 2003, women made up 61 per cent of students at tertiary level. In Swaziland women make up 49 per cent of students at the University of Swaziland, while in Zimbabwe, the Women’s University in Africa (WUA) has managed to increase female enrolment to 85% of total enrolment. In Ethiopia, the government has put in place an affirmative action programme through which women are admitted to tertiary institutions with a grade point average lower than that required for male students. This has increased the rate of female enrolment in Ethiopian higher education institutions. The Laboratoire Genre’s study revealed an interesting trend in which private higher education institutions in Senegal are catering for the specific needs of women, thus attracting a large number of female students.

Despite these positive trends, a number of problems still remain. As regards gender policies, in most cases the educational institutions researched did not have clear gender policies, and the researchers recommended that such policies be formulated and implemented, and that students be made aware of their existence. Gender offices need to be set up or, where they exist, strengthened.

Generally speaking, women continue to be under-represented in science and technology subjects at the tertiary level. In Lesotho, while women form the majority in the faculties of education, humanities and arts, and health and welfare, they are in the minority in science and agriculture. The percentage of women in science subjects at the University of Swaziland is 30 per cent and in mechanical and automotive engineering only 4 per cent. In Zimbabwe, women comprise a lower percentage in all faculties with the lowest percentage in agriculture (28.8 per cent), veterinary studies (26 per cent), science (25.3 per cent), commerce (23.2 per cent) and engineering (6.2 per cent). More in-depth studies are required to determine the reasons why women are under-represented in science and technology.

Ethiopia is an interesting case. Despite the affirmative action programme, women still suffer from various problems, including sexual harassment, and many beneficiaries of affirmative action do not complete their studies due to their weak academic background and social problems. This demonstrates that merely putting in place an affirmative action programme is not enough to ensure equity. In other words, any affirmative action policy should be accompanied by an implementation strategy to assist the affirmative action beneficiaries.

The Laboratoire Genre’s study on Senegal echoes many of the problems existing in African higher education institutions. Public universities are admitting increasing numbers of students without a corresponding increase in facilities. In addition, these universities do not generally take into account the specific needs of women. Private institutions, on the other hand, offer an example of educational practices that public universities could follow. These institutions have diversified their curricula and offer flexible class hours to working and married women. However, the fees charged by private institutions are too high for the majority of women. Further research is required to determine whether the education offered in these institutions does indeed prepare graduates to successfully enter the labour market.

Engaging in dialogue to influence policy

The research papers gathered in this volume constitute just the first phase of FAWE’s research initiative. Over time, the body of research generated by FAWE’s research partners will support FAWE’s efforts to:

- Dialogue constructively with policy- and decision-makers on the prevailing gender inequities that hamper girls and women from exercising their right to education;
- Demonstrate to national and community leaders the high cost to their societies of ignoring women’s educational needs; and
- Engage with government, policy-makers and regional bodies to influence the adoption of approaches and strategies that can help redress the negative effects of these inequities.

FAWE draws its membership from women who are ministers and deputy ministers of education, vice-chancellors and deputy vice-chancellors, senior education policy-makers, prominent educationalists and researchers. They can help take the results and recommendations of these and other research studies a step further by advocating for their translation into concrete action at all levels of education across sub-Saharan Africa. Such action is crucial if Africa is to meet the development challenges of the twenty-first century.
In several African countries, a high proportion of children in their final year of primary school have not acquired a basic competency level enabling them to read, write and count properly. For girls, the disadvantage suffered in terms of access to primary school education is equally evident in terms of learning achievements. In mathematics, for example, girls lag behind boys in academic performance even in the most advanced societies on the continent.

What is the relationship between a student’s gender and academic success? What are the factors contributing to the gaps in academic attainment between girls and boys? What is the relationship between a teacher’s gender and content knowledge? Is there a link between the presence of capable women teachers in a learning institution and the performance of girls? Is there a pattern to these relationships and factors across African countries?

Studies conducted by the PASEC/CONFEMEN and University of Witwatersrand/SACMEQ research teams focused on the quality of learning and female disadvantage. Both teams analysed data gathered from national evaluations conducted at primary school level in a number of French- and English-speaking countries. Their quantitative analyses highlighted differences in average literacy and mathematics test scores between girls and boys to the disadvantage of girls, as well as factors influencing these differentials which become more pronounced as children progress through primary school.

PASEC/CONFEMEN’s qualitative approach explored gender-related social considerations that create differences between girls and boys and could influence the learning achievements of school children. University of Witwatersrand/SACMEQ looked at the effects of children’s socio-economic background on gender equity in schooling and explored the link between teacher gender, subject matter knowledge and the role these factors play in the gender gap in achievement.

The findings of both research teams make a case for greater gender-responsiveness in teacher training and for closer integration of local perspectives into the formulation of national education policy.
The Conférence des ministres de l’Éducation ayant le français en partage (CONFEMEN) (Conference of Ministers of Education of French-Speaking Countries) partnered with FAWE to conduct a study on the theme of gender and learning achievements at the primary school level. The study is based on data gathered from 11 French-speaking African countries during national evaluations conducted by the Programme d’analyse des systèmes de la CONFEMEN (PASEC) (Analysis Programme of the CONFEMEN Education Systems between 2004 and 2009). The statistical analysis of data on pupils, teachers and principals revealed that achievement differentials exist between girls and boys. These learning inequalities can be explained by school-related and extracurricular factors.

In quantitative terms, the findings of the study suggest that:

- boys perform better than girls in mathematics, and the gap widens throughout their school years;
- teacher absenteeism, large class sizes, the literacy of parents, not speaking the language of instruction at home, and living in a rural area are factors that influence the academic success of girls;
- having repeated a class, extracurricular work, homework assistance, class equipment, living standards, frequency of meetings and being a foster child are factors that have an impact on the learning achievements of school children, both girls and boys alike;
- the gender and training of the teaching staff have mixed effects; and
- there are considerable disparities in the gender distribution of teachers and school principals. Hence in primary schools, the higher the grade the fewer female teachers there are, as they mainly teach in lower grades. Likewise, there are much less female principals than male in the primary school system.

To complement the data analysis of the PASEC evaluations, a qualitative study was conducted in Senegal and Cameroon through interviews and classroom observations. This additional study provided an opportunity to reflect on certain issues regarding interactions between pupils, teachers and principals. The sociological analysis reveals that the school seemingly participates in creating gender disparities by reproducing gender stereotypes, and although it can be a powerful tool in the transformation of social relationships in general, it is more comparable to an instrument for maintaining social order. Finally, this study demonstrates that gender-related issues should be given further consideration during evaluations by ensuring a gender-based comparison of pupils, teachers and principals during analysis.

INTRODUCTION

Achieving universal primary education for all by 2015 is a major challenge for the international community as well as for emerging countries, particularly with regard to gender parity in education. There are still 18 countries in sub-Saharan Africa with less than 90 girls enrolled in school for every 100 boys (UNESCO, 2003). Girls’ limited access to school is of particular concern in sub-Saharan Africa, where 72 per cent of out-of-school girls have never attended school, compared to 55 per cent of boys (UNESCO, 2009). Girls’ access to school is therefore still an issue today, although it is indisputable that progress has been made at the primary level.

Beyond access, the quality of education is also worrying. Few studies conducted in Africa actually show that girls could be at a disadvantage in terms of learning achievements. For a greater understanding of the academic attainment gaps between girls and boys at the primary level, CONFEMEN conducted an analysis of the data gathered in 11 French-speaking African countries during the PASEC evaluations. These countries were: Benin, Burkina Faso, Burundi, Cameroon, Chad, Comoros, Congo, Côte d’Ivoire, Gabon, Madagascar and Senegal. This study therefore aims to determine what factors influence the academic success of girls in primary schools in Africa.

There are several underlying aspects to this issue: the performance of girls and boys in learning achievement tests, the processes and factors influencing the education of pupils, and the manner in which this education is delivered by teachers. Gender analysis of learning achievements should consider the roles assigned and associated to girls and boys in order to explain the differentiated learning of pupils. A more statistical analysis of the results of school children and the related factors would not provide indications on the interactions and social representations that teachers have on their pupils, nor on the image, role and status they portray depending on their gender.

In order to take all of these aspects into consideration, the present study is based on a two-pronged analysis:

- A quantitative analysis based on a statistical methodology, so as to highlight differences in grade averages between girls and boys and point out the factors that could influence score variances.
- A qualitative analysis based on a sociological methodology, so as to explore issues relating to the social representation of education stakeholders that could influence the learning achievements of school children.

LITERATURE REVIEW - ASSUMPTIONS

In sub-Saharan Africa, the primary school completion rate for girls in 2007 was 60 per cent compared to 70 per cent1 for boys, implying that girls are more often withdrawn from school in case of academic failure. This is demonstrated by Lange and Martin (1993), who explain that parents withdraw more readily their daughters from school in case of academic failure to make them work in small trade activities, to marry them off, or to have them help with household chores. Moreover, families believe that men are in charge of managing family assets and will therefore rather encourage the education of boys.

1World Bank data, accessible on http://data.worldbank.org/
Mingat’s (2006) study conducted in 41 countries in sub-Saharan Africa reveals that gender disparities exist to the detriment of girls. With regard to primary school completion, there are 87 girls for every 100 boys who complete primary education. In addition, girls lag behind boys more in terms of access than retention in primary schools. Disparities are lower in primary schools and become more pronounced at higher education levels.

On the other hand, a study conducted by Bouya (1993) indicates that girls in Africa perform as well as boys, even in science subjects, when good schooling conditions are met or when they come from a high social background. This study shows that girls perform better in science and technology in single-sex schools. Several reasons are given: girls are distracted by boys and vice versa, which leads to a lack of concentration; they tend to boys to want to take care of girls; the girls flaut their weaknesses; girls lack confidence. This is an indication that co-educational schools have not resolved the issues they were supposed to address.

Finally, regarding the extent to which teachers’ gender might influence the results of pupils, Mapo-Kengue and Mingat (2001) try to analyse this phenomenon at the international level, notably in Africa. Their first finding is that there is an increasing number of female teachers worldwide. With regard to their impact on learning achievements, the authors observe that a 10-point increase in the proportion of female teachers denotes a 3.8 point increase in the retention rate of girls.

Bernard (2006) notes that girls perform better in French than in mathematics. Madagascar seems to be a special case. The author believes that family expectations regarding the education of their children play a more crucial role in their children’s success or failure than the gender issue. The success of boys is more important to families than that of girls. The author reports on another very important point concerning the feminisation of the teaching profession, indicating reports on another very important point concerning the content of educational materials, relations among peers, and the overall organisation of the school environment. Conducting a gender analysis using data collected by PASEC will thus help to determine, based on the geographic area of the school, its status, the level of the class and the subject taught, if:

- there are gaps between the learning achievements of girls and boys, particularly in mathematics;
- the proportion of women/girls among pupils, teachers and principals is less than that of men in French-speaking Africa;
- there are disparities between schools and classes administered by women and men;
- teachers’ gender has an effect on the learning achievements of girls.

Thus, regardless of the approach, the gender perspective is relevant in analysing educational issues. Inequality between girls and boys seems to shape social values and norms. It determines the behaviour of teachers, the content of educational materials, relations among peers, and the overall organisation of the school environment. Conducting a gender analysis using data collected by PASEC will thus help to determine, based on the geographic area of the school, its status, the level of the class and the subject taught, if:

- there are gaps between the learning achievements of girls and boys, particularly in mathematics;
- the proportion of women/girls among pupils, teachers and principals is less than that of men in French-speaking Africa;
- there are disparities between schools and classes administered by women and men;
- teachers’ gender has an effect on the learning achievements of girls.

Thus, in an effort to complete the statistical analysis of PASEC, the sociological study will explore the following line of inquiry: teachers could be contributing, particularly through their gender, to inequalities between girls and boys in education.

**METHODODOLOGY**

The evaluation results of 11 French-speaking African countries where a diagnostic assessment was conducted by PASEC are described in this study, which aims to reveal the gender gaps in the learning achievements of school children. A comprehensive statistical analysis of test scores and factors influencing these scores was conducted on all available data. To complement the quantitative analysis methodology of PASEC, an exploratory qualitative study was conducted in Senegal and Cameroon through interviews and classroom observations.

- **Statistical methodology of the study**
  - Data analysed in this study were collected from standardised tests in French and mathematics administered to pupils of grades 2 and 5 at the beginning and end of the school year on the basis of a representative sample at the country level. Test results are complemented by socio-economic and educational data collected through questionnaires distributed among pupils, teachers and principals of the schools surveyed.
  - The statistical unit of each country sample is the pupil. This study focuses especially on gender and on the learning gaps between girls and boys, using samples representative of the distribution of girls and boys in grades 2 and 5. Regarding the samples studied by PASEC, it is assumed that by considering only girls or only boys, the sample is relatively representative based on the national statistical data available (see Table 1.1).

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Pupils</th>
<th>Girls %</th>
<th>Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>Chad</td>
<td>1244</td>
<td>39.2</td>
<td>34.4–44</td>
</tr>
<tr>
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<td>41.4–49.1</td>
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<td>Madagascar</td>
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<td>52.3</td>
<td>49.1–55.5</td>
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<td>Gabon</td>
<td>1594</td>
<td>53.1</td>
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<td>Burkina Faso</td>
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<td>43.7</td>
<td>41–46.4</td>
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<td>Congo</td>
<td>1777</td>
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<th>Pupils</th>
<th>Girls %</th>
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<tr>
<td>2009</td>
<td>Burundi</td>
<td>2343</td>
<td>48.2</td>
<td>45.4–51</td>
</tr>
<tr>
<td>2009</td>
<td>Côte d’Ivoire</td>
<td>1961</td>
<td>46</td>
<td>42.7–49.4</td>
</tr>
<tr>
<td>2009</td>
<td>Comoros</td>
<td>1916</td>
<td>58.6</td>
<td>56.8–60.9</td>
</tr>
</tbody>
</table>

The statistical analysis produced initially focuses on comparing the scores obtained by girls and boys in PASEC mathematics and French tests in 11 countries. Of the nine sample of countries initially selected for the purposes of this study, data relating to Mauritania was removed because the number of comparable items with other countries was too low, and the test results of the last three countries (Burundi, Côte d’Ivoire and Comoros) to undertake PASEC evaluation were added. The nine countries where a diagnostic assessment was conducted between 2004 and 2007 are Benin, Burkina Faso, Cameroon, Chad, Congo, Gabon, Madagascar, Mauritania and Senegal. This sample comprised 15,740 pupils from grade 5, with boys representing 53.9 per cent of the sample and girls making up 46.1 per cent. The sample size for grade 2 pupils was 18,279, with boys representing 52.6 per cent and girls 47.4 per cent.

The PASEC methodology allows the calculation of average scores in eight tests: pre-tests at the start of the year and post-tests at the end of the year in each subject (French and mathematics) and for each level (grades 2 or 5). The end-of-year (post-test) scores are generally used to make international comparisons. Answers to standardised PASEC test questions are scored, and these scores are rearranged in such a way that the overall coherence of the tests is maintained across all the countries surveyed. National averages are therefore not quite the same as those presented in national evaluation reports. They take weightings into account, in conformity with selected sampling plans, so that the results obtained at the national level can be interpreted.

Secondly, the analysis focuses on factors that may affect the performance of girls and boys. The econometric modeling of PASEC test scores with academic and extracurricular variables at the pupil, teacher and principal levels helps to raise the weighting of all factors that affect the learning process.

Following the methodology adopted by PASEC, identification of the various quality factors was based on the analysis results obtained independently for Benin, Burkina Faso, Burundi, Cameroon, Chad, Comoros, Congo, Côte d’Ivoire, Gabon, Madagascar and Senegal. Based on stabilised regression models of the PASEC VII, VIII and IX evaluations from each of the 11 countries, additional models were developed differentiating the gender of the pupil.
Significant variables that emerged from the models produced were women. Representatives of parent-teacher associations (PTAs) were also interviewed, as well as ministry of education officials at the local, regional and central levels (see Table 1.2).

Such a sample cannot be used to draw a general conclusion on the observed phenomena. However, the results obtained through this complementary qualitative study map out avenues for reflection. They help especially to have a better understanding of some factors that influence learning. These factors could only be interpreted through the quantitative data available, based in particular on the gender of the teaching staff and of pupils. Additional data gathered during these field surveys relate to classroom practices and interactions between the teaching staff, pupils and the education community.

The field survey was conducted over a two-week period in each country. Contact with the schools was facilitated by letters of introduction issued by the ministries of education in Cameroon and Senegal. One school was visited per day. Upon arrival at each school, a meeting was held with the principal to explain the purpose of the survey. The workday then began with two observation sessions, one in a grade 2 classroom and another in a grade 5 classroom. For each school, a mathematics lesson was alternated with a French lesson in both classes. Following these observation sessions, interviews were held with teachers of the classes observed, then with the principals, and finally with the PTA management staff where they were available.

Respondents were not informed of the exact purpose of the research so as not to influence their answers or their classroom practices during observation. Only the principals were informed of the process and purpose of the survey.

The second week was devoted to interviews with inspectors at the departmental and regional levels and with administrative and pedagogical staff at the central level in each country.

In order to highlight the various gender interactions within the schools, the observation grid was structured around:

- the frequency and nature of verbal interactions in class between teachers and pupils per gender;
- the seating arrangements of pupils in classrooms per gender.

In addition, the interview guide helped address:

- the expectations of teachers depending on the gender of the pupil;
- awareness and consideration of gender issues in the curriculum;
- the perception of pupil behaviour based on gender;
- the leadership of female school teachers within the institution;
- school results within the institution;
- the distribution of roles (decision-making, advisory, executive) based on the gender of the teacher;
- consideration of gender issues within the institution; and
- the effective involvement of parents based on their gender in school activities.

Themes discussed with ministry officials included:

- the level of information of the various stakeholders on the national policy;
- the practical application of national policy measures; and
- the degree of ownership of measures decided at the national level.

RESULTS

1. Results of pupils in PASEC tests

The scores presented here have been calculated from answers to PASEC standardised tests, according to pupils’ gender. They concern the 11 countries where PASEC evaluations were conducted between 2004 and 2009. Comparable test questions were selected in all of the countries. In addition, scores have been assigned a weighting based on the respective sampling plans in the various countries. This facilitates the interpretation of results while adhering to the sample structure at the national level. As the gender distribution in the original samples was not evenly structured to meet the needs of the present study, it is only possible to infer the results at the level of the countries surveyed and not at the national level.

It can be noted that PASEC test scores are generally quite low. For grade 5, an analysis of scores reveals that (for both genders) more than 20 per cent of pupils experienced severe learning difficulties in seven out of the 11 countries, and that more than half of the pupils reached a basic competency level in both subjects in only three out of the 11 countries. Furthermore, the linear relationship established between scores obtained in French and mathematics suggests that learning, particularly in mathematics, depends on the

Table 1.3. End-of-year French test scores for grade 2 pupils based on PASEC VII, VIII and IX evaluations

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Average comparable score, weighted grade 2 French test (over 100)</th>
<th>Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>2004</td>
<td>Chad</td>
<td>41.9</td>
<td>41</td>
</tr>
<tr>
<td>2005</td>
<td>Benin</td>
<td>37.7</td>
<td>37</td>
</tr>
<tr>
<td>2005</td>
<td>Cameroon</td>
<td>66.7</td>
<td>64.2</td>
</tr>
<tr>
<td>2005</td>
<td>Madagascar</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>2006</td>
<td>Gabon</td>
<td>52.2</td>
<td>54.9</td>
</tr>
<tr>
<td>2007</td>
<td>Burkina Faso</td>
<td>38.9</td>
<td>38.6</td>
</tr>
<tr>
<td>2007</td>
<td>Congo</td>
<td>42.6**</td>
<td>45.8**</td>
</tr>
<tr>
<td>2007</td>
<td>Senegal</td>
<td>43.8</td>
<td>44.4</td>
</tr>
<tr>
<td>2009</td>
<td>Burundi</td>
<td>36.4</td>
<td>37.4</td>
</tr>
<tr>
<td>2009</td>
<td>Côte d’Ivoire</td>
<td>37.7</td>
<td>40</td>
</tr>
<tr>
<td>2009</td>
<td>Comores</td>
<td>50.7</td>
<td>50.5</td>
</tr>
</tbody>
</table>

*Level of significance: 10%; **Level of significance: 5%; ***Level of significance: 1%
level of fluency in the language of instruction (French in this case). Tables 1.3 and 1.4 present the average comparable scores obtained by grade 2 and grade 5 pupils in the French and mathematics PASEC tests. These scores were calculated separately for girls and boys.

In general, boys tended to perform better than girls in mathematics, but gaps in average scores were significant only in Cameroon and Burkina Faso. Only Congo showed a slight but meaningful lead that girls had in French and mathematics.

Gender gaps in average scores are noticeable towards the end of primary school education, as illustrated in test results of grade 5 pupils in Tables 1.5 and 1.6.

In grade 2, results obtained in French and mathematics were not significantly different for boys and girls. Average scores were more or less the same for French.

### Table 1.4. End-of-year mathematics test scores for grade 2 pupils based on PASEC VII, VIII and IX evaluations

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Boys</th>
<th>Girls</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>Chad</td>
<td>44.2</td>
<td>40.9</td>
<td>40.6 - 47.7</td>
<td>35.5 - 46.4</td>
</tr>
<tr>
<td>2005</td>
<td>Benin</td>
<td>38</td>
<td>35</td>
<td>34.2 - 41.8</td>
<td>31.1 - 39</td>
</tr>
<tr>
<td>2005</td>
<td>Cameroon</td>
<td>57.8***</td>
<td>52.2***</td>
<td>53.8 - 61.8</td>
<td>48.1 - 56.2</td>
</tr>
<tr>
<td>2005</td>
<td>Madagascar</td>
<td>55.2</td>
<td>54.4</td>
<td>51.9 - 58.5</td>
<td>51.5 - 57.2</td>
</tr>
<tr>
<td>2006</td>
<td>Gabon</td>
<td>54.4</td>
<td>53.2</td>
<td>49.8 - 59</td>
<td>47.7 - 58.6</td>
</tr>
<tr>
<td>2007</td>
<td>Burkina Faso</td>
<td>34.7***</td>
<td>32.5**</td>
<td>32 - 37.5</td>
<td>30 - 35.1</td>
</tr>
<tr>
<td>2007</td>
<td>Congo</td>
<td>44.2**</td>
<td>46.9</td>
<td>40.4 - 47.9</td>
<td>43.3 - 50.6</td>
</tr>
<tr>
<td>2007</td>
<td>Senegal</td>
<td>47.8</td>
<td>47.7</td>
<td>43.9 - 51.7</td>
<td>43.3 - 50.3</td>
</tr>
<tr>
<td>2008</td>
<td>Burundi</td>
<td>54.5</td>
<td>53.4</td>
<td>52.3 - 56.7</td>
<td>51.3 - 55.4</td>
</tr>
<tr>
<td>2009</td>
<td>Côte d’Ivoire</td>
<td>28</td>
<td>27.8</td>
<td>25.8 - 30.3</td>
<td>24.8 - 30.8</td>
</tr>
<tr>
<td>2009</td>
<td>Comoros</td>
<td>41.7</td>
<td>38.9</td>
<td>37.2 - 46.2</td>
<td>33.5 - 44.4</td>
</tr>
</tbody>
</table>

*level of significance: 10%; **level of significance: 5%; ***level of significance: 1%

In two out of 11 countries (Burkina Faso and Senegal) a significant difference in French scores to the disadvantage of girls was observed. On the other hand, in Madagascar, girls performed better than boys in French, despite the overall poor performance. It is in mathematics that the gaps were compelling. Indeed, in the fifth grade, girls scored lower in mathematics than boys in seven out of 11 countries. The propensity for girls to underperform in mathematics was confirmed in Congo despite their lead over boys in second grade in both subjects (see Figure 1.1).
This chart shows the gaps between girls and boys in all countries surveyed, and the less impressive mathematics test scores of girls. The five countries where the gender gaps in mathematics are significantly to the disadvantage of girls are indicated with a filled star. In the case of Burkina Faso and Senegal, there are significant gaps in both subjects (two filled stars). Finally, only schoolgirls in Madagascar obtained significantly better results in French (non-filled star).

Based on these results, it can be assumed the gender attainment gaps widen as pupils move further up the education ladder, particularly in mathematics. This phenomenon is found at the university level where boys are overrepresented compared to girls in science subjects. In the countries evaluated by PASEC, inequalities seem to appear from the end of the primary school cycle.

An analysis of achievement levels reveals a significant gender gap, especially in mathematics, to the disadvantage of girls (see Figure 1.2).

Hence, even if the international representation of these levels does not show national specificities, this figure illustrates that:

- girls have greater learning difficulties in mathematics and French than boys (scores are lower than the 25 per cent threshold, which represents the score that could be obtained if a pupil guessed test answers); and
- a greater number of boys reach a basic competency level in mathematics (score above the 40 per cent threshold representing the basic knowledge level).

Gender attainment gaps are not limited to French-speaking Africa. How can this phenomenon be explained? Some believe that girls may have greater difficulties when in competition and prefer a regular programme of work. However, this factor along with the general disliking of the subject, which could be more so among girls, cannot in themselves explain the gender gaps in mathematics.

The qualitative survey conducted in Cameroon and in Senegal shows that there could be a difference in the attitude of teachers towards girls and boys depending on the subject taught. Likewise, teachers could be judging the skills of pupils based not on their performance and capacities, but rather on gender stereotypes. It is therefore possible that behaviours and biases conveyed by teachers and adults in general, whether consciously or not, influence gender attainment gaps.

Gender attainment gaps are not limited to French-speaking Africa. How can this phenomenon be explained? Some believe that girls may have greater difficulties when in competition and prefer a regular programme of work. However, this factor along with the general disliking of the subject, which could be more so among girls, cannot in themselves explain the gender gaps in mathematics.

The qualitative survey conducted in Cameroon and in Senegal shows that there could be a difference in the attitude of teachers towards girls and boys depending on the subject taught. Likewise, teachers could be judging the skills of pupils based not on their performance and capacities, but rather on gender stereotypes. It is therefore possible that behaviours and biases conveyed by teachers and adults in general, whether consciously or not, influence gender attainment gaps.

Figure 1.2. Ranking of pupils per knowledge level at the end of their fifth year in primary education for all 11 countries

Indeed, in the two countries surveyed, when asked why girls or boys perform better, teachers have a tendency to make purely subjective judgments. Boys would therefore be naturally better than girls in mathematics, and girls naturally better than boys in French.

On the other hand, when teachers analyze the performances of their pupils, regardless of the subject, their judgment seems to reflect the attitudes of the children based on their gender. The behavior of girls facilitates the running of the class, while boys are said to be unruly, lazy and obsessed with playing. Thus through their behavior in the classroom, boys seem to require more attention and energy from the teacher than girls.

Based on class observations, particularly on teacher-pupil interactions, teachers seem to have a greater tendency to seek the participation of boys in general and especially in mathematics. The practice of complimenting pupils on their performance was only observed in Cameroon. Girls seem to receive more compliments than boys in mathematics. No significant difference was noted in French.

As regards reprimands, we observe practically no gender gaps in Cameroon, whereas in Senegal boys received more reprimands than girls in general, and especially in French classes. It seems that the Senegalese teachers questioned were more lenient with girls and more severe with boys. This difference of treatment was also found in corporal punishment.

All information gathered during the PASEC surveys concerning pupils, teachers or principals help to complete the study by relating the test scores of pupils to socio-economic factors that can explain the variations. These in-depth gender analyses are performed to address the primary theme of this study.

2. Factors influencing pupils’ achievement

The latest findings of PASEC derived from the review of regression models of evaluations conducted in 14 education systems or sub-systems helped to identify about 15 factors related to a significant and recurring influence (negative or positive) on pupils’ learning achievements regardless of their gender. For the purposes of the study, gender-based regression models were developed for the 11 countries were PASEC evaluations were conducted between 2004 and 2009. According to the same afore-mentioned procedure, two incidence tables were developed for grade 2 and grade 5 pupils, the first for girls and the second for boys.

Factors are underscored by indicating the number of times they impact negatively or positively on the academic performance of girls and boys. Factors with a high incidence should be the ones to receive greater attention in order to improve education policies, as they are the most effective (see Tables 1.7 and 1.8).

There are four main groups of factors to be considered: factors that influence learning regardless of gender; those that influence girls only; those that influence the academic performance of boys only; and teacher training.

2.1 Factors that influence the learning achievements of pupils, regardless of their gender

With reference to the latest PASEC studies, about 15 factors impact, in a recurring way, on the learning achievements of pupils, regardless of their gender. Among these factors, some have a real positive effect on the achievements of pupils, whereas others most certainly hamper learning.

- Repetition

Having to repeat a grade has a negative effect on learning achievements in the 14 countries surveyed. Repetition is indeed a sign of dysfunction in the education system. At the same time, a mere reduction of repetition rates would not be an effective response to academic failure if not coupled with a system to provide support to pupils with difficulties. In recent years, governments in sub-Saharan Africa and partners have been advocating automatic promotion within pre-established sub-levels while initiating measures to help pupils overcome their difficulties. The objective for 2020 is to reduce national repetition rates to 10 per cent. The percentage of repeaters in the countries surveyed varies from 7.9 per cent in Senegal to 35 per cent in Burundi. When greater attention is focused on
Table 1.7. Factors affecting achievement in French and mathematics of grade 5 pupils in 11 African countries

<table>
<thead>
<tr>
<th>Factors influencing learning achievements</th>
<th>Girls</th>
<th>Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repetition of at least one academic year</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Teacher absenteeism/school hours</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Pre-service vocational training of teachers</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Participation in farm work, trade activities (or household chores)</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Rural nature of the school</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Language of instruction spoken in the home</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>The teacher is a woman</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>The pupil is in foster care</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>In-service training of the teacher</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Seniority of the principal</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Age (older than the average age in the class)</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Seniority of the teacher</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Class equipment (blackboard, chalk...)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>High class size</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Active PTA</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>School inspection</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Accommodation within close proximity to the school</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>The teacher is a member of a social association</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: PASEC

Table 1.9. Repetition rates per grade evaluated and per gender

<table>
<thead>
<tr>
<th></th>
<th>Grade 2</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Girls</td>
<td>Boys</td>
</tr>
<tr>
<td>Pupil has repeated at least once</td>
<td>41%</td>
<td>43%***</td>
</tr>
<tr>
<td>Pupil has repeated 2 or more times</td>
<td>7%</td>
<td>8.2%**</td>
</tr>
</tbody>
</table>

*level of significance: 10%; **level of significance: 5%; ***level of significance: 1%

Table 1.10. Percentage of grade 5 pupils engaged in out-of-school chores in urban and rural areas (in the 9 African countries surveyed)

<table>
<thead>
<tr>
<th></th>
<th>Households</th>
<th>Farm work</th>
<th>Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>51.57%</td>
<td>34.95%</td>
<td>52.12%</td>
</tr>
<tr>
<td>Rural</td>
<td>48.43%</td>
<td>65.05%</td>
<td>47.88%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 1.11. Percentage of grade 5 pupils engaged in out-of-school chores in urban and rural areas (in the 9 African countries surveyed)

- **Class equipment**
  - Class equipment includes the supply of teaching and learning materials and furniture in sufficient number. Analyses conducted in each of the 11 countries indicate that adequate equipment could have a positive effect on all education levels. It is also considered to have a positive impact on the learning achievements of girls in grades 2 and 5 in four and two countries respectively, and of boys grades 2 and 5 in three countries. It is therefore essential to encourage education policies in French-speaking African countries to include the supply and proper management of equipment in the primary education sector, and all participating states in this study have identified equipment as a priority.

- **Extracurricular activities**
  - Extracurricular activities include household chores, farm work, and small trade activities. Analyses reveal that these activities have a negative effect on the education of school children, regardless of their gender, in five of the 11 countries. This is a significant factor contributing to the academic failure of school children.

- **Working sessions between principals and teachers**
  - In grade 2, regular meetings (at least one a month) between principals and teachers appear to have a positive effect on the learning achievements of all school children, girls and boys alike. These meetings, which allow a better monitoring of pupils and teachers, are a crucial factor in the successful learning of pupils.

2.2 Factors influencing the learning achievements of pupils based on their gender

Pupils’ gender is a factor that was mentioned in 10 of the 14 countries to explain differences in learning achievements, to the detriment of girls in seven out of 10 cases. Multivariate analyses performed on all school children surveyed by PASEC from 2004 to 2009 inform that girls are at a disadvantage compared to boys.
Experience a principal has gained, the better s/he of their gender. It can be considered that the more effect on the results of grade 5 pupils, regardless their children with a good education.

Having help with their homework has a significant and positive effect on the performance of grade 2 girls in four countries and on that of grade 2 boys in five countries. It is therefore a crucial factor, and systems to support pupils with their homework could benefit those that need help, particularly at the start of the school cycle. This initiative could also help in addressing the issue of repetition.

Foster children
Being a foster child could have a positive effect on pupils, regardless of their gender, in five out of 14 countries. More precisely, in grade 5, when a pupil is in the care of another family or guardian (other than the grandparents), it has a positive effect on the performance of girls in three countries and an adverse effect in one country; whereas for boys, a positive effect is noted in two countries. Girls are also more likely to be put into foster care than boys (20.7 per cent against 17.6 per cent in the nine countries that make up the initial base of the study). In most of the countries surveyed, children are placed in the care of uncles, brothers or sisters when the latter are able to pay the school fees for all the children or when they live nearer the school. Hence, placing a child into foster care is a sign of the parents’ commitment to providing their children with a good education.

Seniority of the principal
The seniority of the principal seems to have a positive effect on the results of grade 5 pupils, regardless of their gender. It can be considered that the more experience a principal has gained, the better s/he understands the management aspects related to the job. A more experienced principal is therefore better equipped to offer quality education.

School inspection
The multivariate analysis reveals a significant and positive effect of school inspectors on the learning achievements of grade 5 pupils. This is valid in three countries for girls and in two countries for boys. Supervision of and support to principals and teachers is fundamental. Indeed, if several teachers have inadequacies due lack of training, if they are frequently absent, or if the principal has difficulties in effectively managing the school, support and close supervision could be an effective way of addressing these issues. It also helps to build a bridge between the administration and the schools, and hence make up for the sense of isolation that certain school officials feel, particularly in rural areas.

Teachers’ gender
Among the findings of the analyses, it appears that the gender of the teacher has a different bearing depending on whether the pupil is a girl or a boy. Female teachers are more often appointed to lower grades (45.2 per cent in grade 2 against 26.1 per cent in grade 5). Having a female teacher is important for the education of pupils in five countries, but it appears that this positive effect is only specific to girls and could conversely be a deterrent for boys.

During interviews conducted in schools in Cameroon and Senegal, all stakeholders acknowledged that female teachers represented a model of success that impacts positively on the education of girls, particularly in terms of school retention and completion. In this respect, given the tasks commonly assigned to female teachers, one can question the type of model they embody. The survey hence reveals that tasks relating to the cleaning of the school are more often assigned to female teachers, particularly in schools in rural areas.

With regard to primary school principals, the situation is critical as women represent only 16 per cent of principals and men 84 per cent. It is interesting to note that female principals have a tendency to appoint more female teachers to teach in grade 5 than male principals. In the sample used for this study, female principals assigned 57.9 per cent of female teachers to grade 5 classes, whereas male principals only assigned 20 per cent. Male principals could hence be discriminating against female teachers by assigning them to teach in the lower grades.

Based on declarations made by female teachers met in the field, it is the women who request to teach in the lower grades despite the fact that these are more difficult to teach on a daily basis than the higher grades, which prepare pupils for examinations. In addition to the official working hours, considerably more time is devoted to teaching higher grades in the primary school cycle, and women appear to have less time given their responsibilities as wives and mothers. As a result, it is apparently not a conscious discrimination of male principals against female teachers. However, men are more inclined to fulfil the request of female teachers to be assigned to lower grades, whereas the argument of heavy workload would be less justifiable before a female principal. Furthermore, based on interviews in Senegal and Cameroon, female principals have a tendency to encourage female teachers.

Finally, female teachers are over-represented in urban areas. There are less than 40 per cent of female teachers and principals in rural areas. When questioned on this issue, they speak of their marital responsibilities. Indeed, it is the husband who decides on the matrimonial home, and the wife is required by law to join him. The issue of the effect of gender on the education of school children is to be considered prudently given the contradicting results obtained depending on country. It is nonetheless positive to encourage the appointment of female teachers, particularly to the higher primary grades, so as to restore parity and to enable pupils to have successful role models throughout their education. In other words, female teachers should be assigned to places and levels where they will have a greater impact on the academic success of girls, in rural schools and in classes that prepare for examinations.

2.3 Factors influencing the learning achievements of girls

Location of the school
It appears that grade 2 pupils in schools located in rural areas have much lower scores (in five incidences among the 14 countries). The same trend is noted for grade 5 pupils, but applies exclusively to girls (four incidences). Almost half of the pupils surveyed attended schools in rural areas. When examining the gender distribution of pupils by grade and geographic area, it can be observed that the proportion of girls enrolled in schools in rural areas decreased in grade 5 (from 45 per cent in total, they represented only 40 per cent in rural areas). In grade 2, the number of girls enrolled in rural and urban areas did not differ from the overall levels. This phenomenon of girls dropping out of school in rural areas could be explained by the fact that, as they grow older, they are more likely to be called upon to help with family chores. They are less encouraged to study, and in some cases have to prepare for marriage. Policies to promote the education of girls in rural areas should continue to be advocated by national governments to facilitate access to education for all regardless of geographic origin and gender.

Class size
The size of the class, i.e. the number of pupils, can have a negative effect on learning achievements when there are more than 40 pupils in a class (this is the international norm instituted by the Fast Track Initiative). In the initial nine-country sample, the average size of second grade classes is 59 pupils, with only 26 per cent of pupils enrolled in classes where the pupil-teacher ratio is lower than 40. For grade 5 classes, average figures are more reasonable (47 pupils on average, with a pupil-teacher ratio lower than 40 in 40 per cent of cases) but conceals wide disparities based on the region and the country. Hence, 13 per cent of grade 5 pupils are enrolled in classes with more than 70 pupils. This is a negative and significant factor for both girls and boys. In grade 2, overcrowded classes put girls in particular at an unfair disadvantage. It is hoped that these figures will diminish as most countries involved in the PASEC studies have integrated in their education policies the objective of reducing the pupil-teacher ratio to 40 by 2015 by constructing new classrooms and recruiting new teachers.

Teacher absenteeism
Absenteism is a factor that greatly impacts on the learning achievements of pupils. In grade 2, teacher absenteeism has a negative impact on the achievements of both girls and boys in four countries. In grade 5, this is especially detrimental to the learning achievement of girls in five countries.
For both grades, pupils begin to score poorly after 10 days of absence during the previous month. In the sample used for this study, 10.5 per cent of grade 2 pupils and 9 per cent of grade 5 pupils had teachers who were absent for more than 10 days during the previous month. The average number of days teachers were absent during the month preceding the survey was 3.3 days. This issue is related to school management issues, the decentralisation of the administration and the motivation of teachers.

- The literacy of parents and the use of the language of instruction at home

For girls, having literate parents was shown to be beneficial only to grade 2 pupils in two countries. This result goes hand in hand with studies that reveal that the more parents are literate, the higher the chances that their children will attend and succeed in school. With regard to girls, it is the mothers who, when literate, contribute more to their academic success. Speaking the language of instruction at home is a practice that positively influences the test scores of grade 2 and grade 5 pupils. It also has a significant positive effect on grade 2 girls in three countries and grade 5 girls in four countries. For boys, speaking the language of instruction at home has a positive effect, especially for grade 5 boys in three countries. However, the language of instruction is often hardly spoken at home. Only 16 per cent of grade 5 pupils declared they frequently spoke French per cent of grade 2 pupils surveyed and 32 per cent of grade 5 boys in three countries. However, the language of instruction at home has a positive effect, especially for grade 5 girls in three countries and grade 5 girls in four countries. For boys, speaking the language of instruction at home has a positive effect, especially for grade 5 boys in three countries. However, the language of instruction is often hardly spoken at home. Only 16 per cent of grade 5 pupils declared they frequently spoke French.

2.4 Factors influencing the learning achievements of boys.

- Age

Based on the PASEC regression models, if the pupil is older than the standard age, this could have a negative or a positive effect depending on the country. Being an over-age pupil could be an advantage for boys in grade 2, whereas it could be a handicap for all pupils in grade 5. The normal ages for grade 2 and grade 5 pupils are seven and 10 years, respectively. However, in our sample the average age of grade 2 pupils is eight years and for grade 5 is 11.7 years.

It is difficult to explain why older boys perform better than others, whereas this is not the case with girls. One of the assumptions is that boys, when older than the normal age, are more mature and motivated to learn. However, this assumption remains to be confirmed.

In grade 5, several assumptions could explain the difficulties faced by older pupils:

- The above-average age is closely related to their having repeated a class, and it is observed that pupils who repeat do not perform well in school.

- For girls, the older they become, the more household chores they perform, particularly in poor families.

- Seniority of the teacher

Teachers’ seniority proved a crucial factor, and negative only for boys in grade 5 in four countries. This finding is difficult to interpret, especially since it affects only boys. Even so, it can be assumed that a teacher with seniority is less likely to tolerate certain behaviours of pupils. And since boys are often more boisterous than girls they tend to be more affected by this phenomenon.

- Teacher training

Teachers with a high academic level (A-level or higher education level) appear to have a negative effect on the performance of grade 2 boys in three countries. This phenomenon is not replicated in grade 5 and could be due to a lack of motivation of teachers with a high education level and assigned to teach in lower grades, or could also be due to a teaching method ill-adapted to pupils in lower grades.

Pre-service vocational training appears to be important for pupils in seven countries with a rather contrasted effect. This factor can be positive or negative for grade 2 girls and boys depending on the country. In grade 5, the positive effect of vocational training on the achievement of boys is confirmed in four countries, but it remains subdued for girls, as it is negative in two countries and positive in the other two. The vocational training of teachers is a key factor in the education of school children. However, the fact that its effect is sometimes considered negative and sometimes positive, or even null and void, begs the question as to the quality of pre-service training.

Finally, in-service training of teachers appears to have an impact on the learning achievements of pupils. It is considered to have a positive and significant impact on grade 2 boys in three countries, and on grade 5 girls and boys in two and three countries respectively (its effect is considered negative only in one country for grade 2 and grade 5 girls). [See Table 1.12 for a summary of influencing factors].

3. The creation of differences between boys and girls

The following analysis takes into account the results of the qualitative survey conducted in schools in Senegal and Cameroon, and complements what has already been pointed out: that certain practices in schools contribute to creating differences and maintaining gender stereotypes. While the qualitative analysis revealed that teachers sometimes assessed differently the performance of their pupils based on their gender and not on objective criteria, certain practices such as the attribution of roles and responsibilities to pupils can also be an indication of the differing patterns of behaviour in favour of girls or boys, which are likely to maintain gender inequality and stereotypes.

3.1 Leadership of class prefects based on gender

Class prefect is a special position held by one or more pupils for a determined period. The class prefect is elected either by the teacher or by the pupils and has rights and responsibilities that the other pupils do not. Practices in Senegal and Cameroon appear to be different with regard to the role, selection criteria and assessment by teachers of class prefects. In Cameroon, the common practice is to have only one prefect in each class. Most class prefects in the Cameroon sample are girls (seven girls compared to three boys), whereas in Senegal it is more common to have a boy/girl pair.

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Table 1.12. Summary of influencing factors and their effects based on pupils’ gender

<table>
<thead>
<tr>
<th></th>
<th>G2 Girls</th>
<th>Boys</th>
<th>G5 Girls</th>
<th>Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repetition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extracurricular activities</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Class equipment</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Use of French at home</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Homework assistance</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Principal-teacher meetings</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Foster children</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Seniority of the principal</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>School inspection</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Rural area</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Class size</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Teacher absenteeism</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Literate parents</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Pupil’s age</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Seniority of the teacher</td>
<td></td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Teachers’ association</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Academic level of teacher</td>
<td></td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Pre-service training</td>
<td></td>
<td>-/+</td>
<td>+</td>
<td>-/+</td>
</tr>
<tr>
<td>In-service training</td>
<td></td>
<td>-/+</td>
<td>-</td>
<td>-/+</td>
</tr>
</tbody>
</table>

1The Fast Track Initiative (FTI) is a global partnership between donor and developing country partners to ensure accelerated progress towards the Millennium Development Goal (MDG) of universal primary education by 2015. See website: http://www.educationfasttrack.org/.

2The language of instruction in most countries evaluated by PASEC is French. However, in certain countries such as Madagascar and Burundi, instruction during the first two years of primary education is in French.

3The language of instruction in most countries evaluated by PASEC is French. However, in certain countries such as Madagascar and Burundi, instruction during the first two years of primary education is in French.

4The class prefect supervises the cleaning groups established by the teacher.

5The class prefect takes the lead to ensure that the exercise left on the board by the teacher is done when the latter is away.

6The class prefect notes the names of those talking in the absence of the teacher.

7The class prefect takes the lead to ensure that the exercise left on the board by the teacher is done when the latter is away.

8The class prefect takes the lead to ensure that the exercise left on the board by the teacher is done when the latter is away.
The role of the class prefect

In Cameroon, the class prefect has three main tasks: cleaning, supervising lessons, and discipline. Their most recurrent task is to ensure discipline, then they have to make sure that lessons are learned, and finally they ensure that the class is kept clean (see Table 1.13).

### Table 1.13 Distribution of tasks assigned to class prefects based on gender (Cameroon)

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Lessons</th>
<th>Cleanliness</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Boys</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

With regard to gender differences, it is observed that boys are often responsible for keeping discipline in the classroom when the teacher is away rather than dealing with lessons or the cleanliness of the classroom. In Senegal, class prefects appear to play a more substantial role and in addition to ensuring cleanliness, discipline, and that lessons are learned, they also ensure the distribution of supplies, erase the blackboard, and keep the keys to the cupboard or the classroom (see Table 1.14).

In spite of the fact that there are boy/girl pairs, most of the tasks are assigned to boys. If there are two prefects in a class, the tasks of ensuring discipline and keeping the keys to the classroom or the cupboard are exclusively assigned to boys, whereas that of ensuring cleanliness is entrusted to girls. Concerning lessons, supplies, and the blackboard, both boys and girls are assigned these tasks with a slight predominance of boys over girls, particularly with regard to erasing the board. Practices of class prefects in Cameroon are more homogenous than in Senegal.

### Selection criteria for class prefects

Most of the Cameroonian teachers questioned declared that they authoritatively selected the class prefect. They mainly relied on three criteria: the participation and dynamism of the pupil, age, and performance.

Teachers explained that they based the leadership of class prefects on the latters’ capacity to exercise physical domination on their classmates (capacity to intimidate) or a psychological domination as a result of being older. On the other hand, teachers who based their choice on performance considered that the leadership of class prefects is built on intellectual domination. The choice of a girl to be a class prefect can be motivated by a certain ‘maternal instinct’, yet this should not be a selection criterion, for it is a social construction, which contributes to the reproduction of gendered roles. In Senegal, class prefects are apparently voted in by their classmates. However, it is generally the teacher who outlines the selection criteria of candidates prior to the vote. Again, the practice in Senegal seems to be less harmonised than in Cameroon.

### Teachers’ assessment of class prefects based on their gender

Cameroonian teachers describe boys as being more flexible with regard to instructions received, whereas girls tend to scrupulously follow instructions. They seem to be less open to the influence of their classmates. Of the 10 Cameroonian teachers questioned, only three really assessed class prefects based on their gender, attributing gender-based qualities and faults. The rest stated that they found no gender-based differences. In contrast, there was no gender-based appreciation of class prefects by teachers in Senegal.

### 3.2 Gender-based sharing of responsibilities

To the question: “Do you empower your pupils with regard to specific tasks?” the most recurrent answer is the “cleaning of the classroom” for both samples in Senegal and Cameroon. With regard to the practice of sweeping the classroom, of the 9 Cameroonian teachers who assign cleaning activities to their pupils, 6 declared that cleaning groups include both boys and girls. The others assign sweeping to girls only. In Senegal, answers provided by teachers indicated that cleaning the class is the main task of pupils. Moreover, girls seem to be in charge of sweeping. Only one declaration was made indicating that cleaning groups are mixed.

Based on these declarations, it is observed that there is actually a gender-based distribution of tasks. Even when they are assigned to cleaning activities, they are exempted from sweeping. They are entrusted with tasks that the teacher sees as requiring physical effort. The gender-based distribution of household chores within the classroom are even more obvious in the sample from Senegal than that from Cameroon.

### 3.3 Seating arrangements of girls and boys

Beyond interactions between teachers and pupils, gender equalities are also discernable through interactions among pupils. The seating arrangements of pupils, girls and boys, in a classroom is never born out of coincidence. Whether the decision is made by the pupil or by the teacher, gender representation in seating arrangements has a certain impact on their socialisation. In second grade classrooms observed in Cameroon and Senegal, same-gender pupils tend to share the same desk whereas the tendency is reversed in fifth grade classrooms. In Cameroon, same-gender pairs in second grade are mainly composed of boys, whereas a balance between genders is observed in fifth grade. The sample from Senegal reveals that same-gender desks are mainly composed of boys in both second and fifth grades. According to the opinion of co-ed school supporters as a sign of gender equality, socialisation that cultivates gender interaction would be more favourable to girls. However, in view of their seating arrangements, Cameroonian pupils observed seem to be more oriented towards a gender balance whereas Senegalese pupils seem more oriented towards a separation of sexes.

### CONCLUSION – RECOMMENDATIONS

Most studies conducted on girls’ education in Africa deal with girls’ access to education and not the quality of learning. PASEC evaluations provide us with information on the quality of academic achievements and reveal that boys perform better than girls especially in mathematics. However, the disadvantage of girls observed in terms of access to primary school education is again noted with regard to learning achievements. The latest synthesis of PASEC studies indicate that in 7 of the 14 countries evaluated, 20 per cent of pupils have severe learning difficulties. Indeed, many French-speaking African countries have a high proportion of pupils in their final years of primary education who have not acquired a basic competency level enabling them to read, write and count properly.

Gender inequalities highlighted in this study extend beyond the pupils. They also concern teachers and principals, whether in terms of distribution or educational inputs. We mentioned in our analysis that pupils, girls and boys, need successful role models to encourage them in their studies. Now, the first role model for a primary school pupil, outside of the close family unit, is either the female teacher for girls or the male teacher for boys. Therefore, one of the first recommendations is to encourage ministries of education to ensure greater parity in the recruitment of teachers. This is even more true with regard to positions of school principal, where women are poorly represented. In addition to being a role model for girls, female principals tend to establish a balance with regard to the distribution of female teachers, by urging them to teach in higher grades where they are currently too few in number. Female teachers and principals should be posted to rural areas for girls attending school in such areas to have the same conditions and learning opportunities as their mates in urban areas.

The teacher issue is at the core of the analysis concerning the creation of gender inequality. The analysis reveals that teachers could have a propensity to influence the learning achievements of pupils (knowingly or not) by judging the capacities of the latter based on gender stereotypes. Likewise, teachers would tend to “favour” one or the other gender depending on their own gender. Finally, they could be participating in reproducing gendered roles by assigning pupils tasks that implicitly refer to roles that society assigns to men and women.

It would be desirable for teacher training programmes.

It can therefore be concluded through the analysis of class practices and the interactions between teachers and pupils that the school reproduces gender relations that are already present in society. It is thus closely linked to the education system and would individuals devoted to social development, schools are in many respects the place where these disparities are created and especially where they are reproduced, in particular against girls and women. Our education systems contribute to creating the roles and responsibilities socially assigned to men and women in the society.
to integrate the gender issue and discuss the creation of gender inequalities in school, so as to instil “good gender practices” in teachers.

A certain number of recommendations can be made concerning factors that influence the learning achievements of pupils, regardless of their gender:

- Reducing the rates of repetition and adopting measures to help pupils with learning difficulties throughout the school year.
- Improving classroom equipment as well as the supply of mathematics and French books that the pupils can take home.
- Raising the awareness of parents, especially in rural areas, on excessive child labour.
- Enhancing pre- and in-service vocational training of teachers and incorporating a module on the management of gender issues.
- Strengthening support to schools through an inspection mechanism that is adapted to the needs of teachers and principals and readily available.

The following recommendations can be made concerning factors that influence the learning achievements of girls in particular:

- Reducing the size of the class so as not to exceed 40 pupils per class.
- Encouraging the setting up of mothers’ associations.
- Strengthening literacy programmes for parents, for women in particular.
- Ensuring adherence to school timing, both with regard to the absence of teachers and the start dates of the school year. Strengthening inspection services could especially contribute to a better monitoring of this adherence to school hours.
- Ensuring parity in the recruitment of teachers and school principals and in their postings to the various levels of the education system.
- Providing greater support to schools in rural areas as a matter of priority, with regard to classroom equipment and inspection.
- Encouraging schools and communities in rural areas to set up a support system for pupils living far from the school.

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ABSTRACT
This report presents the results of two research projects which took place in Southern and Eastern Africa aimed at evaluating gender and educational quality in primary schools. The first study took place between 1995 and 1998 and surveyed 1,000 schools and 20,000 students in Kenya, Malawi, Mauritius, Namibia, Zambia and Zimbabwe. The second study took place between 1998 and 2004 and involved 2,000 schools and 40,000 students. It was conducted in Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. Both of these research projects focused on pupils’ performance in literacy and mathematics and on the differences in performance according to gender in the various countries. In addition to the survey results, the authors endeavour to put forward some possible reasons for these differences.

OVERVIEW
This report is part of a series of studies produced through a joint collaboration between the University of Witwatersrand School of Education, the Southern and Eastern African Consortium for Monitoring Educational Quality (SACMEQ) and the Forum for African Women Educationalists (FAWE). The basis for the research study is a two-year research network initiative introduced by FAWE to advance research on gender and education in sub-Saharan Africa. This phase of the study focused on three specific goals. The first looked at the extent of female gender disadvantage in African primary schools using a unique set of data on primary school students in Southern and Eastern Africa. The second explored ways in which the gender gap in performance in African primary schools could be improved. A third related goal was to develop the skills base of African female researchers. The research team consisted of five team members representing four countries in the region.

Previous research has shown that society benefits from educating girls, but advances in schooling for girls have been clouded by reservations about whether to provide high quality education to girls. Opposition to educational opportunities for girls has come in many forms and has cut across tribe and class. At issue are fears that formal schooling for girls would interfere with traditional norms and practices. For many girls in Africa who choose to pursue their educational ambitions, this continues to be a lonely pursuit. In spite of these setbacks, there are instances of girls succeeding academically in parts of Africa, and sometimes even outperforming their male counterparts. In addition to inter-country differences, varying patterns can emerge within the same country. To gain a clearer understanding of the issue of gender inequality in primary education, this report seeks to answer the following questions: What is the relationship between a student’s gender and academic success? Is there a pattern to this relationship across countries and across time?

This report consists of (a) a brief introduction to the SACMEQ study and the data collection methods, (b) a brief review of relevant literature pertaining to this study, and (c) a presentation of the results divided into two sections. The first part of the results section discusses the extent of gender disadvantage in primary schooling across the study period. The second part reports on the effect of students’ socio-economic status on gender equity in schooling. Finally, the report concludes with a summary of the results and suggestions for future work.

What is SACMEQ?
SACMEQ was launched in 1995. It represents 15 education systems in Eastern and Southern Africa. Seven countries were involved in the SACMEQ I project, which took place between 1995 and 1998, and surveyed 1,000 schools and 20,000 students. The SACMEQ II study took place between 1999 and 2004 and involved 2,000 schools and 40,000 students. The most recent SACMEQ project (SACMEQ III) was launched in 2005. However, data for this phase of SACMEQ was not available at the time of compiling this report. The study’s main purpose is to evaluate the quality of primary level education across a selection of African countries.

A representative sample of students, teachers and school principals from each country completed questionnaires. In addition, a selection of students and their teachers took part in a literacy and numeracy assessment. The study design uses similar survey testing instruments across countries to facilitate international comparison. To increase local relevance, the scales derived from the SACMEQ data are matched to the proficiency targets identified by local experts (Grisay and Griffin, 2006). Crucially for this report, SACMEQ data was disaggregated by gender, making a gender focus possible.

Girls and schooling in Africa
There has been increasing international recognition of the importance of schooling, particularly for girls, in developing settings such as sub-Saharan Africa. SACMEQ has been motivated in part by empirical evidence that a longer enrolment period in school delays marriage and child bearing for girls. African girls spend the majority of their time living in communities where gender structures are strictly defined, and these beliefs persist at school. For reasons of efficiency, co-educational schooling environments are more widespread than single-sex schools. The majority of learners in this study are in their early teens, a time when young men and women are formally initiated into their differential social roles.

Gender disparities in academic achievement have received considerable attention by researchers over the last four decades, beginning with the pioneering work of Maccoby and Jacklin (1974) and closely followed by the Fennema-Sherman studies in the 1970s (Fennema and Sherman, 1977; 1978). A growing body of

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There has been increasing international recognition of the importance of schooling, particularly for girls, in developing settings such as sub-Saharan Africa.
literature has explored the barriers and opportunities involved in the education of boys and girls. It has been suggested that in general the gender gap in educational achievement is narrowing over time, and that the extent of change mirrors the broader status of men and women in a given society (Friedman 1989; Baker and Jones 1993). Although the gender gap in achievement appears to be narrowing, the evidence suggests that girls continue to lag behind boys in mathematics and science achievement, and that in some countries girls have generally lower learning outcomes than boys. Therefore, a study of education in Africa is incomplete without examining the influence of students’ gender on educational outcomes, as differences in power and status between men and women are greater in Africa than in more developed countries. Students spend the majority of their time living in a world where gender roles are strictly defined, and these beliefs persist when they enter the school gates.

The link between gender and educational support in the home is associated with tasks that hamper school work. If girls have more domestic chores at the beginning and the end of each day (such as walking long distances to collect water or firewood, cooking, cleaning and taking care of younger siblings and elderly family members), then they will have less time to complete homework and may even be forced to miss days of school in order to focus on domestic tasks. Depending on its nature, the involvement of parents can either help or hinder the gender effect. In one study, parental involvement actually reduced differences between the performance of girls and boys in mathematics (Muller, 1998). The author of the same study made the point that the importance of parental involvement on gender and achievement will depend on the age of the child and will diminish as a child begins to exert his or her independence in school and life choices.

The ways in which girls and boys are socialised affects their academic success, the subjects they choose, and their expectations regarding particular subjects (Parsons, Kaczala and Meece, 1982). Studies undertaken to understand the effect on expectations on the perceptions of mathematics and science (Adams, 1984; Fennema and Sherman, 1977; Keesee and Kottke, 1992) show that girls’ and boys’ attitudes towards mathematics differ, and society influences these attitudes. In a study conducted in Tanzania, for example, Peasgood et al. (1997) found that parents’ lack of trust in their daughters’ academic ability contributed to low educational achievement. In addition, recent studies suggest that socialisation and students’ expectations play an important role in how girls and boys perform in mathematics. Highly competent female students fail to attain their potential if they are conditioned to believe that they are inherently unable to pass in mathematics (Dweck, 1986; Fennema and Sherman, 1977, 1978). Often, at an early stage in a girl’s academic career, attitudes about mathematics are shaped by parents and peers, who lead them to believe that they are not as good as boys in mathematics. Invariably, the school environment mirrors the society in which it is found (Zue, 2008).

A child's educational domain can also influence the gender gap, but the context of the school is especially important in determining the magnitude of gender differences within the school. According to Jimenez and Lockheed (1989) and Mensch and Lloyd (1998), boys receive more attention than girls in class, and difficult questions tend to be addressed to them. Similarly, in their examination of this differential treatment, Peterson and Fennema (1985) found that teachers and the organisation of the learning environment favoured boys. The team found that competitive approaches that favour boys rather than cooperative approaches to learning were mostly used. In this way, girls seem to lag behind given their low involvement and participation.

Although a complex combination of factors contribute to the gender gap in student achievement, most studies that have addressed gender inequalities in educational achievement have either focused on individual student background factors or school environment factors independently, and ways in which these influence pupils’ academic achievement. Few studies have explored how the interplay between external and internal factors (including subject performances, social economic status, and location) influence academic achievement in relation to gender. In addition, few studies have taken a cross-country comparison approach to assess the relationship of students’ gender and their academic achievement. This study therefore seeks to fill these gaps.

What is the extent of gender disadvantage in primary schooling? Evidence from SACMEQ I and II

SACMEQ I: Figure 1.3 gives a summary of the results of computing the national average grade 6 literacy test scores for the seven countries that took part in SACMEQ I in 1995. Analysis of the scores was done separately for boys and girls so that data could be disaggregated by gender both within countries and across countries in cross-national comparisons. As mentioned earlier, the average score for all participating countries in a given SACMEQ study was 500. Thus, scores above 500 were above the regional average, and scores below 500 were below the regional benchmark. It is worth noting that in Mauritius and Zimbabwe, both high performing countries, girls performed better than boys. For example, in the case of Mauritius, girls actually outperformed boys by over 10 points on average. Girls tended to lag behind in most countries with lower average test scores (Malawi, Zambia and Namibia), with the exception of Zanzibar. This could imply a possible link between quality and gender inequality in schooling. This pattern could be related to subject area. However, it is difficult to address this issue because SACMEQ I was limited to assessing literacy performance, which will be discussed later.

Figure 1.4 clearly shows the result of comparing reading and mathematics achievement among boys and girls during the SACMEQ II study. Each bar value represents the difference in test scores between national reading and mathematics test scores. Differences were

SACMEQ II literacy scores by gender are presented in Table 1.16. The gender achievement gap in favour of girls is evident in eight of the 14 education systems, half of which are low-performing (Lesotho, Namibia, South Africa and Uganda) and the other half high-performing education systems (Botswana, Mauritius, Seychelles and Swaziland). The gender differential is widest in Seychelles, a high-performing education system. Boys outperform girls in literacy in four countries, two of which are high-performing (Mozambique and Tanzania) and two low-performing education systems (Malawi and Zanzibar). There is no gender achievement gap in literacy in two countries (Kenya and Zambia).

A comparison of SACMEQ I and SACMEQ II literacy scores for the six countries that were involved in both waves of SACMEQ indicates that the gender gap appears to be narrowing in both low- and high-performing education systems, except for Mauritius and Namibia, where the achievement gender gap in literacy achievement in favour of girls increased. Although the gender gap has narrowed since SACMEQ I, this is happening in the context of declining quality in five of the six countries, with the exception of Kenya.

Figure 1.4 clearly shows the result of comparing reading and mathematics achievement among boys and girls during the SACMEQ II study. Each bar value represents the difference in test scores between national reading and mathematics test scores. Differences were
calculated by subtracting the reading score from the mathematics score for boys and girls. Therefore a positive value (right hand side) indicates that the average maths score was higher than the average reading score.

Figure 1.4 also shows that there are gender differences in subject performance. The largest difference in subject area performance among boys occurred in Mauritius (56), followed by Uganda (29) and Kenya (27). Among girls, Seychelles (41) recorded the highest difference, followed by Mauritius (40) and then Tanzania Mainland (32). Achievement in mathematics and reading among boys was more or less the same in Zambia (1), Botswana (1) and Lesotho (1). Average reading and mathematics scores were equal for Malawian girls.

A gender disadvantage in mathematics is quite apparent in Figure 1.4. The difference between mathematics and reading scores is larger among boys than girls in countries with higher mathematics than reading scores (Kenya, Mauritius, Mozambique and Uganda). This implies that boys' performance was better in mathematics in these countries. Whereas in countries that perform better in literacy than mathematics, girls' performance was higher (Namibia, Seychelles and Tanzania). In nine out of the 14 countries, mathematics scores were lower than reading scores for girls (Botswana, Lesotho, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zanzibar). For boys, only four countries achieved mathematics scores that were below the reading scores (Namibia, Seychelles Swaziland and Tanzania).

Figure 1.4. Subject area differences, SACMEQ II

These measures are valid for girls given existing work. For the purpose of this illustration, an SES measure of 0 represents the pooled average for all of SACMEQ countries. It is clear from this figure that both boys and girls in Mauritius, Seychelles, South Africa and Swaziland are more advantaged. Among the countries that are below the SACMEQ SES, in three countries (Malawi, Mozambique and Uganda), grade 6 boys are worse off than grade 6 girls. Only in Zambia are girls considerably worse off than boys. There are four points to keep in mind when interpreting these results. First, in countries with low enrolment, it is likely that children who can afford to attend school are wealthier than children who are out of school. Further, there is evidence in countries such as Malawi, Uganda and Mozambique suggesting that girls from the poorest households are more likely to drop out of school in higher grades, hence the higher socio-economic status profile for girls in grade 6. Second, it is possible that more boys than girls were enrolled in school during this period. In certain countries, mass education policies had been introduced in the years leading up to the SACMEQ II study (for example in Malawi in 1994 and Uganda in 1997). It has been reported elsewhere (Colclough, Al-Sammarrai, Rose, and Tembon, 2003) that more boys than girls enrolled in the early grades of primary school following the introduction of universal primary education (UPE) in Malawi and Uganda. Third, there is a strong correlation between age and SES, age and reading achievement, and age and mathematics achievement (see Table 1.15).

Generally, more advantaged students and high performing students in both mathematics and reading tend to be younger in all countries except Seychelles. There are no gender differences by age in the performance of learners in reading and mathematics. Finally, how socio-economic status relates to academic achievement might differ when viewed within countries.

In Figure 1.6, this last point is viewed in more detail. The horizontal axis represents students' socio-economic status within each country. The vertical axis reflects average mathematics achievement for girls within each country. In the majority of countries, the red line summarising this relationship is quite flat. In a few (Namibia, South Africa), the line is fairly flat and then becomes steeper at higher SES levels. This implies that socio-economic status matters most for the academic performance of the wealthiest girls in these countries.
Table 1.16 includes information on the 1999 Gender Parity Index (GPI) to assess whether over-enrolment patterns differed by gender. The GPI is the ratio of girls to boys attending primary school. A number greater than 1 would indicate that more girls attend school, and a number below 1 would suggest that there are more boys enrolled in primary school. For example, in Lesotho there are 112 girls for every 100 boys in primary school. In contrast, in Mozambique, for every 79 girls in primary school, 100 boys are enrolled. Whereas the GPI estimates reflect trends for the entire primary school phase, the SACMEQ data are limited to grade 6. It would be valuable to investigate this area further when data for SACMEQ III become available, as participation rates were much higher across the region during this study.

SES achievement differences by school location for SACMEQ II girls

The analysis of gender and SES in this study went step further by asking whether female pupils in urban settings were more advantaged than pupils from rural areas during the study period. It has been argued that household demand for child labour is less in urban than in rural areas. In Table 1.17 the relationship between academic achievement and place of residence among the poorest of girls is explored. The table compares the performance of girls from the poorest quintile (the poorest 20 per cent of female pupils in each country) from rural areas and large towns or cities in literacy and mathematics against the overall performance of girls, irrespective of SES and place of residence, in each of the 14 countries.

There is a clear advantage for girls residing in urban settings. However, irrespective of location, generally the poorest girls lagged behind in their performance compared to the average score for all girls. However, in three countries (South Africa in literacy, Lesotho and Mozambique in mathematics), the average scores for the poorest girls in urban settings surpassed the country’s average score for girls. In Seychelles, rural girls from the poorest quintile had mean scores above the average score for girls. The advantage is more apparent for literacy than for mathematics scores. The

Table 1.17 Comparison of literacy and mathematics mean scores by place of residence for the poorest girls, SACMEQ II

<table>
<thead>
<tr>
<th>Country</th>
<th>Literacy</th>
<th>Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botswana</td>
<td>514</td>
<td>453</td>
</tr>
<tr>
<td>Kenya</td>
<td>547</td>
<td>456</td>
</tr>
<tr>
<td>Lesotho</td>
<td>510</td>
<td>462</td>
</tr>
<tr>
<td>Malawi</td>
<td>514</td>
<td>453</td>
</tr>
<tr>
<td>Mauritius</td>
<td>510</td>
<td>462</td>
</tr>
<tr>
<td>Mozambique</td>
<td>453</td>
<td>438</td>
</tr>
<tr>
<td>Namibia</td>
<td>514</td>
<td>453</td>
</tr>
<tr>
<td>Seychelles</td>
<td>514</td>
<td>453</td>
</tr>
<tr>
<td>South Africa</td>
<td>453</td>
<td>438</td>
</tr>
<tr>
<td>Swaziland</td>
<td>514</td>
<td>453</td>
</tr>
<tr>
<td>Tanzania</td>
<td>514</td>
<td>453</td>
</tr>
<tr>
<td>Uganda</td>
<td>514</td>
<td>453</td>
</tr>
</tbody>
</table>

*The poorest girls are from quintile 2 for Mauritius and Seychelles.
literacy mean scores were higher among the poorest girls residing in urban areas than those living in rural areas in nine countries (Kenya, Lesotho, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania and Zanzibar). Only in four countries (Botswana, Seychelles, Uganda and Zanzibar) did the poorest girls from rural settings outperform girls from large towns or cities. In Malawi, which had the lowest mean scores in literacy, school location did not matter for the poorest girls.

The results for mathematics are mixed. There were fewer countries that showed an urban advantage in mathematics achievement compared to literacy achievement. The average mathematics scores were higher for the poorest girls from urban areas in six of the countries (Lesotho, Mauritius, Mozambique, South Africa, Tanzania and Zambia) while the poorest girls from rural areas were more advantaged in Botswana, Kenya, Malawi, Seychelles, Uganda and Zanzibar. In two of the countries (Namibia and Swaziland), there appeared to be little difference in average mathematics scores for the poorest girls from urban and rural settings.

CONCLUSION

This final section summarises the main findings of the present study as follows:

- Not all countries revealed gender disadvantage in primary schooling. There is a gender disadvantage in literacy in Malawi, Mauritius and Zambia, with girls lagging behind boys in Malawi and Zambia, and boys lagging behind in Mauritius.
- In terms of subject performance, there is a gender disadvantage in that mathematics scores are lower than reading scores for girls. In two thirds of the SACMEQ countries, mathematics scores were lower than reading scores for girls.
- Very few patterns exist in terms of geographical clusters and countries with similar recent histories.
- The question of gender equity and schooling is very much localised and needs to be understood given the unique context of each country.
- There does appear to be some evidence that girls’ performance is not quite as strong in mathematics as in reading. This could be related to curriculum, to teaching practices, or even to the teaching material. This point requires detailed country studies.
- The socio-economic background of girls in various SACMEQ countries differs, but the report suggests that girls who are attending school are not worse off than boys.
- The advantage of personal wealth is stronger in some countries than in others, especially for the wealthiest groups in society. In many countries, there are clearly other factors (possibly more directly related to the process of schooling) that influence the performance of girls in primary schooling.

REFERENCES

The relationship between teacher quality and girls’ performance in African primary schools: Evidence from SACMEQ II

ABSTRACT
This report is the second in a series of related studies produced through a joint collaboration between the University of Witwatersrand School of Education, the Southern and Eastern African Consortium for Monitoring Educational Quality (SACMEQ) and the Forum for African Women Educationalists (FAWE). The basis for the research study is a two-year research network initiative introduced by FAWE to advance research in gender and education in sub-Saharan Africa. It is related to the Education for All goal of eliminating gender disparities in primary and secondary schooling and achieving gender equality.

Drawing from secondary data collected by SACMEQ II between 1999 and 2000, the study explores ways in which the gender gap in performance in African primary schools could be improved. It also endeavours to determine which factors have an impact on pupils’ achievement. These factors include the location of the school, i.e., whether it is in an urban or a rural area, the gender of the teacher and “teacher quality indicators”, which in this study were considered to be academic qualifications, professional qualifications, teaching experience and teacher competency.

1. Introduction
This study focuses on the influence of the quality of female teachers on the achievement of female pupils in primary schools in Southern and Eastern Africa. In particular, the study examines aspects of teacher quality, gender, and how these characteristics influence female pupils’ mathematics achievement. To achieve the above goals, the study is framed around two central questions:

- What is the relationship between a teacher’s gender and a teacher’s content knowledge?
- Is there any link between the presence of capable women teachers and the performance of girls in SACMEQ schools?

Statement of problem
Gender discrepancies and the means of addressing this gap in schooling have long been a contentious issue in other parts of the world, as in Africa. As with previous studies, using SACMEQ II data, earlier findings reveal that girls lag behind boys in mathematics in most of the SACMEQ countries. Even in the most advanced societies, there is evidence that girls under-perform in mathematics when compared to boys, with more pronounced differences expected during adolescence.

In exploring solutions to this disparity in mathematics achievement, a large body of research has investigated the effect of teacher quality on pupil achievement. The focus of these studies has been mainly on measuring the extent to which male and female teachers influence male and female students’ mathematics and reading performance. Rarely has research pursued the link between teacher gender, subject matter knowledge, and the role that these factors play in reducing the gender gap in achievement. The SACMEQ data present a unique opportunity to explore these issues simultaneously. This study sets out to contribute to the knowledge gap in this area.

2. Literature review
A growing body of research has shown that highly competent teachers are associated with positive academic achievements among their students (Darling-Hammond, 2000; Ball, Hill and Bass, 2005; Mandeville and Liu, 1987). Improving the quality of teaching is a long-term theme of the SACMEQ project, with important implications for teacher preparation programmes in Africa. A child’s educational domain can influence the gender gap in performance but the context of the school is especially important in determining the magnitude of gender differences in performance. Recent studies have paid significant attention to the relationship between gender and mathematics achievement in terms of performance and access of both girls and boys to education (Gallaher and Kaufmann, 2005). While some of these studies demonstrate that teachers positively influence their students’ academic achievement, others did not find an association between teacher gender or quality and student achievement.

2.1 Teacher gender and mathematics achievement
There is conflicting evidence with regard to whether a teacher of the same sex provides a higher level of mentorship and improves learning prospects for female students, especially in developing countries. In a study conducted in five Indian states to examine the relationship between student learning outcomes and the presence of female teachers, Chudga and Sankar (2008) found that a teacher’s gender had no effect on students’ mathematics learning outcomes. The difference between male and female teachers, according to this study, was only seen in their classroom administration styles and belief in their students’ learning capabilities. However, other studies indicate that female teachers improve both male and female achievement (Nannynjo, 2007; Dee, 2008) and that competent female teachers can act as role models and help motivate girls to perform better (Kirk, 2006; Lee and Lockheed, 1998; Michaelowa, 2001).

Despite these findings, some research has questioned the positive role of female teachers, noting that certain female elementary teachers pass on their anxiety about mathematics to female students. In a small-scale study conducted in the United States, female elementary teachers showing signs of anxiety about mathematics were found to have a significantly negative effect on mathematics achievement of their female students compared to the confident teachers (Beilock, Gunderson, Ramirez and Levine, 2010). Others argue that female teachers lack confidence and self-esteem, tending to reinforce gender stereotypes that affect their ability to act as role models in schools or positively influence the performance of female pupils (Mirembe and Davies, 2001; Mensch and Lloyd, 1998). On the other hand, a study conducted in Uganda among 3,950 grade 6 pupils in 200 schools found that female teachers had a positive impact on girls’ performance. For example, girls scored higher than boys in both mathematics and reading when taught by a female
teacher. In reading, although girls had significantly higher scores, the test scores of both girls and boys improved when taught by a female teacher. Although there were no significant differences, female teachers had a greater influence in raising the mathematics test scores of girls compared to boys. Boys, however, performed significantly better than girls in mathematics when taught by a male teacher (Nannynyojo, 2007).

However, this study was only conducted in one country and does not tell us much about which characteristics of female teachers influenced girls’ improved performance.

2.2 Influence of teachers’ gender and school location on mathematics achievement

Research has established that pupils in urban areas outperform those in rural areas given the availability of both qualified teachers and access to material inputs in most urban schools as compared to a lack of such in rural areas (World Bank, 2004; Minner, 2001). Using hierarchical linear modeling, a study investigating teachers’ gender and students’ achievement in grades 4 and 5 in Pakistan found that the sex of the teacher, their teaching methods and location highly influenced students’ achievement. In this study, with regard to school location, male teachers were shown to improve both female and male students’ mathematics scores in rural schools as opposed to female teachers in rural schools.

The findings suggest first that school location and the sex of the teacher have an influence on pupils’ achievement scores and, secondly, that female teachers may account for the low student achievement in rural schools. In urban areas, although students of female teachers in grade 4 had higher scores in mathematics than those of male teachers, there were no consistent significant differences (Warwick and Jatoi, 1994). Problems of accommodation, access to transport, and insecurity in rural areas could be reasons why capable female teachers prefer to teach in urban schools, which may partly explain the low performance of students taught by female teachers in rural schools in the above study.

2.3 Teacher quality and student achievement

There are mixed findings regarding teacher quality and the influence this has on student achievement. A teacher’s subject knowledge has been reported as a significant predictor of student achievement (Mullens, Murnane, and Willett, 1996; World Bank, 2004). Some studies have found that improved student performance seems to be strongly linked to teachers with high academic and professional qualifications (Fuller, 1987; Heyns and van der Westhuizen, 1983). However, a study that examined equity, effectiveness and achievement in schools in three East African countries concluded that factors related to the improvement of academic achievement in schools instead tended to broaden the gender achievement gap in favour of boys (Zuze, 2008). In a related study that drew on SACMEQ data to examine the relationship between teachers’ gender and quality, pedagogical practices and grade six pupils’ mathematics achievement in Namibia, the findings suggest that mathematics teachers with specific training in the subject produced positive effects on a pupil’s mathematics scores. (This effect was highest in relation to the high and not low socio-economic status of pupils.) The findings suggest that student mathematics achievement depends on teachers with high competence and professional training in mathematics. A replication of these findings in 11 other SACMEQ countries found that number of years of teacher training and level of subject matter competency highly influenced pupils’ mathematics achievement (Duthilleul and Allen, 2005). This study, however, did not focus on the effects of teachers’ gender and quality, and how this factor influences the performance of female pupils.

Similarly, an analysis of teacher quality based on subject matter knowledge, professional experience and academic experience conducted in 14 African countries revealed a strong relationship between teachers’ quality and reading achievement in four of the these countries, but not in the remaining 10 (Lee, Zuze and Ross, 2005). This would imply that there may be other factors influencing achievement in reading.

Warwick and Jatoi (1994) argue that, with respect to teacher quality, students of female teachers with degree qualifications scored significantly higher than those of male teachers with similar levels of qualifications. Although most of the teachers in developing countries teaching in primary schools may not hold degrees, this could imply that academically qualified female teachers have the potential to influence student achievement. The difference in the above findings may be due to differences in specific contextual factors.

3. Methodology

Data for this study are drawn from the second wave of a cross-national research project conducted by SACMEQ. The study employed quantitative methods using secondary data derived from SACMEQ II to explore the relationship between teachers’ quality and the performance of girls in African primary schools.

The main objective of the SACMEQ II study was to assess the quality of primary schooling across 15 Southern and Eastern African countries. SACMEQ collected comprehensive data from a representative sample of grade 6 pupils and their teachers and school principals, using questionnaires that were standardised across the countries to allow for cross-country comparisons. In addition, the grade 6 pupils and the reading and mathematics teachers sampled were assessed in reading and mathematics skills and competencies.

The analysis for this study covered seven of the 15 countries to reflect geographical representation and cross-country variation in economic development and educational performance. We initially intended to focus on the seven countries that participated in both SACMEQ I and II. However, Mauritius had to be excluded because data on teacher competency was not collected. The analysis therefore includes five countries that participated in SACMEQ I and two additional countries from each of the two sub-regions that participated in SACMEQ II.

To address the two research questions posed by the study, quantitative techniques were employed. The preliminary analysis was mainly descriptive based on average scores and cross-tabulation of selected teacher quality measures such as academic and professional qualifications, years of teaching experience, and girls’ performance in mathematics. The analysis went further to explore these relationships by school location. SACMEQ data are disaggregated to gender, which made a gender-focused analysis possible. In order to address the first question, i.e. the relationship between teachers’ gender and content knowledge, teachers’ mean scores in mathematics and reading were compared to determine if gender gaps in performance existed and whether the differences in mean scores of male and female teachers were statistically meaningful. The question of whether there were any gender differences in performance by school location by comparing mean scores of teachers in rural and urban schools was also examined. SACMEQ data are presented at the individual pupil level. As such, variables regarding teachers are reported at the individual pupil level. To enable an examination of the effect of teachers’ gender on teachers’ content knowledge, the individual pupil level data was aggregated to a higher level, i.e. the school.

To establish whether there is a relationship between female teachers’ quality and girls’ achievement, the performance of girls from the bottom 20 per cent achievement quintile was compared with that of girls in the top 20 per cent achievement quintile in relation to mathematics and female teacher quality characteristics, including gender of the teacher and teacher competency as measured by the teacher’s mathematics score, academic and professional qualifications, and experience. The study went further to explore the relationship between students’ gender and teachers’ quality through graphs derived from hierarchical linear models. The individual pupil level data was used to analyse these relationships.

3.1 Limitations of the study

The aggregation of data meant that the teacher estimates were based on aggregated and not individual level teacher variables. This reduced the robustness of the estimates that were derived. The aggregated data also limited the kinds of analyses conducted to explore these relationships. This is because statistical models that explore these relationships require data to remain either at the individual or group level. Failure to follow this rule would have led to the reporting of misleading results.

4. Results/findings

4.1 Teacher background characteristics

This study focuses on the relationship between teachers’ quality and gender and how these factors influence girls’ mathematics performance. As such, the variables included in the background section are useful in terms of understanding the data and aid in the interpretation of the findings.
**Gender**

In the grade 6 teacher sample used in this study, female teachers constituted less than half of the total sample of mathematics and reading teachers. Malawi and Uganda had the highest proportion of male teachers, with 83 per cent and 84 per cent teaching reading, and 74 per cent and 90 per cent teaching mathematics respectively (see Table 1.18).

However, the proportion of females teaching reading in urban schools was higher than males in five of the seven countries (Malawi, Namibia, Kenya, Zambia and Zanzibar). In urban schools, Zanzibar has the highest proportion of females teaching mathematics. There is an equal percentage in Zambia and Malawi (see Table 1.19).

In terms of subject and location of teachers, there was a higher proportion of female teaching both subjects in urban rather than rural areas, with the exception of Namibia, where almost equal proportions of female mathematics teachers were located in rural and urban areas (see Table 1.19).

A larger proportion of males teaching reading and mathematics were found in rural areas compared to females, because generally the proportion of female teachers in rural areas is lower. This has been attributed to lack of basic amenities, insecurity for women in rural areas, and concerns about separation from partners and family members (Gaynor, 1998; Warwick and Jatoi, 1997). The teaching force is predominantly male because in the majority of African countries fewer girls qualify for teacher training programmes. However, the dominance of male teachers may not reflect teaching as a profession of choice, but could be an indication of lower academic qualifications for male teachers, which makes teaching the last resort.

In countries like Kenya, female teachers constitute 34 per cent of those teaching reading in rural areas, compared to 12 per cent of those teaching mathematics in the same locations. Subject preference is apparent here based, perhaps, on cultural beliefs and gender stereotypes regarding subjects that male and females should teach, or perceptions that women are better at languages and men at mathematics.

The countries sampled – with the exception of Botswana, which had more than 55 per cent of female school heads – had less than a quarter of the schools headed by a female teacher (see Table 1.18).

As regards mathematics teachers in urban schools, the male teachers sampled had higher academic qualifications than their rural counterparts in Botswana, Kenya, Malawi, Namibia and Uganda. In Zambia and Zanzibar, male teachers had higher qualifications in rural schools. Female mathematics teachers with a secondary education and above were mostly to be found in urban schools, with a majority in Uganda, Kenya and Namibia.

In mathematics, a higher proportion of academically qualified female teachers in Zanzibar, Kenya and Zambia were in rural schools, with the exception of Uganda, where there were equal proportions of female teachers in both rural and urban schools. In Botswana, Malawi and Namibia, a higher proportion of female teachers with a secondary education and above were in urban schools.

The proportion of grade 6 female reading teachers with a secondary education and above was higher in rural schools in Kenya, Malawi, Uganda, Zambia and Zanzibar, while in Botswana and Namibia the proportion was higher in urban than in rural schools.

**Teacher quality**

- **Academic qualifications**

Overall, the majority of mathematics and reading teachers had completed secondary education. In Kenya and Uganda, over 95 per cent of the teachers had completed secondary education or higher. A higher proportion of female teachers than male teachers had acquired a secondary education or above, and in Uganda and Kenya, almost all grade 6 female teachers were academically qualified (Figure 1.7).

In terms of location, the findings indicate that there were more academically qualified male teachers in rural than in urban schools, teaching reading in Namibia, Uganda, Zambia, and Zanzibar. It is only in Botswana, Kenya and Malawi that more academically qualified teachers were located in urban areas (see Figure 1.7).

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- **Professional qualifications**

In this connection, the term “professional qualifications” refers to teachers with two years and above of teacher training because, it is generally believed that teacher qualifications are needed to teach effectively.
In all the countries, the majority of those teaching mathematics and reading were certified to teach. Despite this high percentage of certified teachers (93 per cent for reading and 90 per cent for mathematics), only half of those in Malawi had received two or more years of teacher training (see Figure 1.8).

In mathematics, five of the countries (Botswana, Kenya, Malawi, Namibia and Zanzibar) had a higher proportion of teachers with two years or more of teacher training in urban compared with rural schools. In reading, the proportion of male teachers who had received two years or more of teacher training was higher in urban than in rural schools, and for female teachers the proportion was higher in rural schools in only two of the countries – Botswana and Zanzibar.

### 4.2 Relationship between teachers’ gender and teachers’ content knowledge

Among other factors, teachers’ subject matter knowledge has been considered one of the factors that positively influence teaching and learning. Therefore, in order to explore the relationship between teachers’ gender and content knowledge, average scores of grade 6 mathematics and reading teachers were compared by gender and location of the teacher. The results are presented in Table 1.20.

#### Table 1.20. Comparison of grade 6 teachers’ reading and mathematics achievement by teacher gender: SACMEQ II

<table>
<thead>
<tr>
<th></th>
<th>Bot</th>
<th>Ken</th>
<th>Mal</th>
<th>Nam</th>
<th>Uga</th>
<th>Zam</th>
<th>Zan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All teachers</td>
<td>758</td>
<td>791</td>
<td>712</td>
<td>730</td>
<td>701</td>
<td>762</td>
<td>649</td>
</tr>
<tr>
<td>Female teachers</td>
<td>749</td>
<td>790</td>
<td>704</td>
<td>735</td>
<td>736</td>
<td>753</td>
<td>645</td>
</tr>
<tr>
<td>Male teachers</td>
<td>774</td>
<td>794</td>
<td>715</td>
<td>726</td>
<td>694</td>
<td>770</td>
<td>653</td>
</tr>
<tr>
<td>T-test for equality of means</td>
<td>3.39***</td>
<td>.50</td>
<td>.88</td>
<td>-.89</td>
<td>-.21*</td>
<td>1.94*</td>
<td>.57</td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All teachers</td>
<td>755</td>
<td>960</td>
<td>771</td>
<td>746</td>
<td>833</td>
<td>757</td>
<td>701</td>
</tr>
<tr>
<td>Female teachers</td>
<td>744</td>
<td>943</td>
<td>763</td>
<td>747</td>
<td>824</td>
<td>731</td>
<td>689</td>
</tr>
<tr>
<td>Male teachers</td>
<td>775</td>
<td>966</td>
<td>774</td>
<td>745</td>
<td>837</td>
<td>780</td>
<td>711</td>
</tr>
<tr>
<td>T-test for equality of means</td>
<td>3.08**</td>
<td>1.39</td>
<td>.66</td>
<td>-.13</td>
<td>.35</td>
<td>4.22***</td>
<td>1.25</td>
</tr>
</tbody>
</table>

*P <.05, **P<.01, ***P<.001

_aP-value indicates the probability of 1 in a 100 that the difference in mean scores is by chance and the lower the value the more powerful the test._
A comparison of the mean scores for male and female teachers shows that in terms of teacher competency, male teachers have higher content knowledge in both mathematics and reading than female teachers.

Overall, male teachers had higher mean scores than female teachers in five of the seven countries in reading (Botswana, Kenya, Malawi, Zambia and Zambia). The difference in average scores between male and female teachers was, however, only statistically significant in three countries, namely Botswana, Zambia and Uganda.

In all countries except Namibia, the mathematics mean scores were higher for male than for female teachers. Whereas in Uganda the mean score for reading was higher for males, in mathematics it was higher for females. However, the difference between male and female teachers’ scores was statistically significant only in Botswana and Zambia.

- Teachers’ performance by gender and geographical location

Regarding differences in competency by location, the overall comparison shows that teachers in urban schools had higher mean scores than those in rural schools, with the exception of Zanzibar in reading and Kenya, Malawi and Zambia in mathematics (see Table 1.21).

In terms of teacher gender differences, a gender gap favouring male teachers was apparent only in reading and mathematics achievement scores in both urban and rural schools. However, there seems to be no difference in the achievement scores of male and female teachers in rural and urban schools with regard to mathematics and reading competency in Kenya.

The comparison of teachers in rural and urban schools reveals that in mathematics, urban female teachers had higher mean scores than rural female teachers. It is only in Kenya, Malawi and Uganda that female teachers in rural schools outperformed female teachers in urban schools. In both rural and urban schools, in terms of mathematics achievement among female teachers, Zanzibar had the lowest mean scores, while Kenya and Uganda had the highest scores (see Table 1.21).

Whereas the mean scores for reading were higher in all countries in urban schools, the gap between female urban and female rural teachers was widest in Namibia by 69 points.

In terms of mathematics achievement scores in rural schools, male teachers had an advantage; in four of the seven countries (Botswana, Malawi, Zambia and Zanzibar), mean scores were higher for male than for female teachers. In urban schools, male teachers outperformed female teachers in all countries.

In reading, in Uganda female teachers had an advantage in rural schools, while those in urban schools had an advantage in Namibia and Uganda.

4.3 Link between capable female teachers and the performance of female pupils in SACMEQ schools

The first research question explored the relationship between teachers’ gender and subject matter knowledge. Findings show that although the majority of female teachers had acquired the desired levels of subject competency in mathematics and reading, male teachers had a relatively higher competency in both subjects, based on school location. This section builds on these findings and female teachers’ background characteristics to examine whether there is a link between capable female teachers and girls’ mathematics achievement.

To explore the relationship between teachers’ quality and girls’ mathematics achievement, a comparison of pupil mean scores with the four teacher quality indicators (academic qualification, professional qualification, teaching experience and teacher competency) was made between the bottom and top 20 per cent of students in each country ranked according to their performance in the mathematics tests. This analysis was done for female teachers only. We also explored the relationship between students’ achievement and teachers and head teachers’ gender to assess whether the presence of female teachers and female head teachers could be related to improved girls’ performance. The relationship was also analysed graphically to depict the effect of teachers’ quality and the relationship between students’ gender and performance in mathematics.

- Teachers’ competency and girls’ performance

Teachers’ competency in mathematics was measured by teachers’ scores in mathematics tests. The teachers’ scores were ranked into five quintiles to identify the highest and the lowest 20 per cent of teachers. The girls’ mean scores were then analysed by teacher competency groups. Figure 4 shows that teachers’ competency did not always have the expected effect on girls’ performance, and that no consistent pattern emerged across countries. Only in three countries, namely Botswana, Malawi and Namibia, did the top 20 per cent of girls taught by teachers with high competencies in mathematics have higher mean scores than the top 20 per cent of girls taught by teachers with low competencies. Even in these three countries, the difference was significant only in Namibia. On the other hand, the top 20 per cent of girls taught by teachers with low competencies had much higher mean scores than girls taught by teachers with high competencies. In Kenya, Zambia and Zanzibar, there was no difference in performance between the top 20 per cent of girls taught by teachers with high competencies and those taught by teachers with low competencies (see Figure 1.10).

Table 1.21. Comparison of teachers’ reading and mathematics mean scores by sex and location: SACMEQ II

<table>
<thead>
<tr>
<th></th>
<th>Bot</th>
<th>Ken</th>
<th>Mali</th>
<th>Nam</th>
<th>Uga</th>
<th>Zam</th>
<th>Zan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>754</td>
<td>791</td>
<td>709</td>
<td>705</td>
<td>694</td>
<td>763</td>
<td>646</td>
</tr>
<tr>
<td>Female</td>
<td>744</td>
<td>787</td>
<td>699</td>
<td>701</td>
<td>734</td>
<td>752</td>
<td>634</td>
</tr>
<tr>
<td>Male</td>
<td>765</td>
<td>795</td>
<td>710</td>
<td>709</td>
<td>688</td>
<td>768</td>
<td>652</td>
</tr>
<tr>
<td>Urban</td>
<td>762</td>
<td>791</td>
<td>720</td>
<td>765</td>
<td>720</td>
<td>760</td>
<td>658</td>
</tr>
<tr>
<td>Female</td>
<td>752</td>
<td>791</td>
<td>706</td>
<td>770</td>
<td>739</td>
<td>755</td>
<td>655</td>
</tr>
<tr>
<td>Male</td>
<td>791</td>
<td>790</td>
<td>749</td>
<td>756</td>
<td>713</td>
<td>773</td>
<td>661</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>754</td>
<td>967</td>
<td>776</td>
<td>713</td>
<td>824</td>
<td>759</td>
<td>699</td>
</tr>
<tr>
<td>Female</td>
<td>732</td>
<td>968</td>
<td>772</td>
<td>717</td>
<td>842</td>
<td>726</td>
<td>690</td>
</tr>
<tr>
<td>Male</td>
<td>776</td>
<td>967</td>
<td>776</td>
<td>709</td>
<td>824</td>
<td>774</td>
<td>703</td>
</tr>
<tr>
<td>Urban</td>
<td>756</td>
<td>952</td>
<td>759</td>
<td>791</td>
<td>855</td>
<td>752</td>
<td>707</td>
</tr>
<tr>
<td>Female</td>
<td>752</td>
<td>930</td>
<td>757</td>
<td>787</td>
<td>810</td>
<td>736</td>
<td>689</td>
</tr>
<tr>
<td>Male</td>
<td>772</td>
<td>965</td>
<td>761</td>
<td>794</td>
<td>872</td>
<td>793</td>
<td>762</td>
</tr>
</tbody>
</table>
Girls’ mathematics achievement and female teachers’ academic qualifications

Figure 1.11 presents the relationship between girls’ performance and female teachers’ academic qualifications. Teachers’ academic qualifications were coded into two groups, i.e. those who had a lower educational qualification, and those with a senior secondary education or higher. Senior secondary education is generally the minimum entry point for teacher training in most of the SACMEQ countries. The figure shows that a high academic qualification is not significantly associated with the performance of high or low achieving girls, although there is some evidence that higher achieving girls benefit more when taught by a high quality teacher.

While in some countries there was an increase in girls’ mathematics mean scores when taught by female teachers with high qualifications, in countries like Botswana, Kenya, Namibia and Zanzibar, the difference with female teachers who had low academic qualifications was marginal. In countries like Malawi and Zambia there was no difference between the performance of girls taught by academically qualified female teachers and those taught by female teachers with lower educational levels. High academic qualifications do not appear to narrow the gap between high and low achieving students, suggesting that higher academic qualifications do not necessarily have an effect on girls’ performance in mathematics (see Figure 1.11).

Professional qualifications and girls’ performance

The female teachers were grouped into two categories of professional competency. Those with high professional qualifications were those who had at least two years of teacher training, while the low professional qualification group comprised those who had less than two years of teacher training or who were unqualified (see Figure 1.12).

Figure 1.12. Girls’ achievement in mathematics by teachers’ professional qualifications

Figure 1.11 indicates that the higher achieving girls tended to benefit more when taught by teachers with more years of teacher training. In all seven countries the mean scores of the top 20 per cent of girls taught by teachers with high professional qualifications had higher mean scores than higher achieving girls taught by teachers with low professional qualifications. However, teachers’ quality as measured by professional qualifications appears to have little impact on the bottom 20 per cent of girls. In Botswana, Malawi and Uganda, the bottom 20 per cent of girls taught by female teachers with low professional qualifications had higher mean scores than the bottom 20 per cent taught by highly qualified teachers. On the other hand, in Kenya, Zambia and Zanzibar, the teachers with low professional qualifications produced better results for the bottom 20 per cent of pupils than those with high professional qualifications.

Teaching experience and girls’ performance

The grade 6 teachers had a wide range of years of teaching experience. They have been categorised into three groups of those with little or no experience (0-5 years) and those with over five years of teaching experience.

As Figure 1.13 shows, years of teaching experience seems to have little effect on girls’ performance, irrespective of the performance group they belonged to.

Relationship between teacher quality and mathematics achievement in Kenya

Figure 1.14 shows the relationship between teachers’ quality and students’ mathematics achievement and gender using SACMEQ II data from Kenya and multilevel modelling. In terms of gender, the graph clearly shows that boys perform better than girls in mathematics. The graph also illustrates that teacher quality does not appear to narrow the gap between boys’ and girls’ achievement. Thus the graph confirms our earlier findings that there is a weak link between teachers’ quality and girls’ achievement, and it could be that teaching methods are more important. It is also possible that there is very little variation in teacher quality, and therefore this is not likely to have much of an effect.

The teacher quality is a factor generated from factor analysis using a teacher’s mathematics score, academic qualifications and professional qualifications.
CONCLUSION

Lack of female mathematics teachers may create a problem of an inadequate number of female role models for girls in schools. It is clear from the findings that primary school teaching is predominantly male, as opposed to popular belief that it is a woman’s occupation. Therefore, these findings suggest that the gender of the teacher is not a determinant in choosing teaching as a career, but there may be other factors.

The geographical location of the school significantly influences whether a female teacher is likely to be located in an urban or a rural school. In reference to this study, although on average more teachers were found in the urban schools, a larger proportion of qualified female teachers were located in urban schools, and they were teaching reading more than mathematics compared to a larger proportion of qualified male teachers in rural schools teaching reading.

What these findings suggest is that the relationship between teachers’ gender and the subjects they teach is only found in mathematics. More males can be seen in the total sample in both rural and urban schools teaching mathematics compared to female teachers in general.

The gender gap between male and female teachers in mathematics and reading competency does not favour female teachers. Although female teachers had acquired the minimum competency levels desired and had achievement scores not significant different from those of their male counterparts, except in a few countries, they still lagged behind male teachers in reading, but more especially in mathematics. The findings thus suggest a gender gap in teachers’ competency favouring male teachers. This factor may not be related to the academic qualifications of female teachers in general, even when they were more qualified than male teachers. This might be explained by individual country differences, e.g. in some countries (for example in Uganda and Zambia) male mathematics teachers had more experience than female mathematics teachers, among other factors – including, for instance, more male exposure due to their gender roles – that this study did not look into.

Teachers in urban schools performed better than those in rural schools, due to the availability of teaching support in urban schools. The advantage of male over female teachers in mathematics in all countries was enhanced by location. Thus the urban advantage may have contributed to better performance of all teachers, but provided an added advantage to male teachers’ performance.

Teacher quality factors do not appear to influence the performance of girls, which might be explained by the fact that these countries have similar levels of teaching quality. The findings from the study suggest that greater attention should be paid to teaching and learning processes. Teaching and learning take place in challenging situations, which may make it impossible for capable teachers to make an impact. These challenges include under-resourced schools, large class sizes and lack of effective support to teachers after initial training. More often than not, policy has looked at issues that can be easily manipulated, like training more teachers or raising the minimum academic entry levels of teachers. In addition to the processes, there may be a lack of a gender component in traditional pre-service and in-service training.

POLICY RECOMMENDATIONS

The findings of the study have implications on educational policy at both the national and regional levels. The evidence that better qualified teachers do not necessarily improve the performance of students is a call to re-examine teacher professional development and support programmes.

There are also indications that the lack of effect might be due to other factors related to the teaching and learning process. Policy interventions have often been unsuccessful in impacting the process of teaching and learning at the school or classroom level because they have ignored the micro-learning conditions at the school level. There is clearly a need to pay more attention to the processes of teaching and learning that are more likely to have an immediate and direct impact on the performance of students, particularly that of girls. While providing continuous professional development support to teachers is important, ignoring the conditions under which they teach and the broader social context of educating girls will slow the pace of progress.

REFERENCES

3. Duthieleu, Y., and Allen, R (2005): Which teachers make a difference, Implications for policy Makers in SACMEQ countries, IIEP
In Lesotho, Swaziland and Zimbabwe, girls’ and women’s participation in science, mathematics and technology subjects is severely undermined at both secondary and tertiary level. A significant attrition rate among secondary school girls impedes access to university. While the drop-out rate for women in tertiary education is not as high as at secondary level, many women are unaware of the gender equality measures within colleges and universities that could support their successful participation and completion as well as their safety and wellbeing.

What gender policies are in place to enable girls to continue their education effectively beyond primary school? Why are girls and women less likely to choose science, mathematics and technology subjects at secondary school and university? What social processes within learning institutions can enhance the participation of girls and women in education?

Through a series of questionnaires, focus group discussions and interviews, ASHEWA sought to gather evidence on the factors affecting the capacity of girls and women to successfully continue and complete their studies, particularly in science, mathematics and technology. In Lesotho, while there is a higher percentage of girls and women enrolled in secondary and tertiary education than boys and men, there are strong prejudices held by society regarding which subjects and degree courses are suitable for girls and women. In Swaziland, too, a high proportion of girls and women are enrolled in post-primary education, but ASHEWA’s study found that lack of clear gender policies within learning institutions contributed to low enrolment of female students in subjects such as science and mathematics where male students predominate. In Zimbabwe, while women make up 45 per cent of total enrolment in universities, colleges and teachers’ training colleges and the Ministry of Higher and Tertiary Education has explicit gender policies in place, only 27% of students at the National University of Science and Technology are women.

These disparities suggest it is critical to improve the quality of teaching and learning in science, mathematics and technology at all levels of education, including through in-service development of teacher competencies.

Gender disparities in access, participation and completion
ABSTRACT

This study was undertaken to verify if there is any evidence to demonstrate that girls and women are less likely to choose science, mathematics and technology at secondary and tertiary educational levels in Lesotho. It also examined other factors that affect the capacity of girls and women to successfully continue their studies. In 2002/2003, girls comprised 56 per cent of the enrolment at secondary level, while at tertiary level women comprised 61 per cent. However, at tertiary level, the enrolment of women was equal to that of men only in the social sciences, business, and law (50 per cent each). Women dominate in education (68 per cent), humanities and arts (53 per cent), and health and welfare (94 per cent), whereas they form a minority in science (30 per cent) and agriculture (46 per cent) (UNESCO, 2005). The findings indicate that, while institutions – according to their teachers, lecturers and administrators – do not believe that there are any institutional barriers against girls and women taking these subjects, but rather that it is the widespread preconception that girls and women cannot do well in these subjects that leads to low enrolment in science, mathematics and technology. This view is widely shared by both male and female students. In addition, girls are faced with a number of challenges, mostly financial and social problems linked to poverty, which contributes to their high drop-out rate. Some children drop out of school because they have to earn a living, in case of the death of a parent, often due to AIDS. Other socioeconomic problems affecting youth are related to alcohol, drugs and sex. Challenges within the school system include utilisation of unsuitable teaching methodologies and corporal punishment. There are fewer dropouts among women at tertiary level. Nevertheless, much could be done to help women succeed at this level. The current study also looks at the conditions of service of tertiary level staff with reference to gender equity.

INTRODUCTION

Statement of the problem

While there is no overt policy preventing girls and women from specialising in science, mathematics and technology in Lesotho, it is widely considered that such subjects are not for girls and women. This is evident from the enrolment rates at tertiary level. Policies and strategies need to be developed to redress this situation. In particular, institutional capacity building needs to be put in place.

Methodology

The research was carried out in three institutions, namely Lesotho College of Education; the Lerotli Polytechnic; and the National University of Lesotho. The following methodology was applied:

- Questionnaires on gender disparities were developed for secondary school students and teachers, tertiary students, lecturers and administrators.
- The questionnaires were discussed with fellow researchers from Lesotho and Zimbabwe.
- The questionnaires were tested and finalised.
- Sample institutions were selected.
- Sample institutions were visited, questionnaires filled in, and focus group discussions and interviews conducted.
- Experiences were shared through Fawe with other researchers.

RESULTS/FINDINGS

1. Secondary education

There are more girls (56 per cent) enrolled in secondary schools in Lesotho than boys. However, only 34.6 per cent of the age group enrol at secondary level (UNESCO, 2005, pp. 342–343). Whilst this is relatively high by African standards, it is low by international standards.

Community level barriers for girls and boys regarding schooling

Focus group discussions with secondary school teachers indicated that there are numerous barriers that affect children between the ages of 13 and 18. These include failure to pay fees because a parent is unemployed or has passed away. Sometimes parents fail to encourage their children to do their school work. In schools where there is a parent-teachers’ association (PTA), many parents do not attend these meetings. Other reasons include loss of parents, going to initiation schools (especially boys), and dropping out of school to care for ailing parents. Female students were said to drop out in order to look after their siblings when a parent dies of AIDS.

Regardless of the government’s support through issuing grants to most of the students, some of them are not keen to attend classes. There are boys who resort to drug abuse and drop out of school. Sometimes students are sponsored by the government or donors, but since such funding does not cover school uniforms, meals and transportation, they end up dropping out. Some female students in secondary schools get pregnant and feel uncomfortable continuing their studies, even if the school policy allows them to do so.

Many of the problems that students encounter are related to direct costs, which include responsibilities that have fallen on them or the need to keep up with the cost of living. Incidences of child labour, where female students do laundry for other families, or boys look after animals, or even early marriages, were mentioned. Students look for jobs to solve their economic problems. Females become domestic workers or work in clothes factories, while males tend to become bus conductors.

In some rich families, education is not considered a priority. Some said that females, when lacking attention from busy parents, seek attention elsewhere and end up pregnant. Boys also assume an important role in looking after their siblings. Some teachers indicated that in certain cases “the newly found freedom gets to their heads”, resulting in lack of dedication to their studies.

Reasons why female students do not take science subjects

Responses from secondary students as to why female students do not like science subjects indicate...
numerous reasons. Responses from mixed-sex schools were similar to those collected in girls’ schools. Male students indicated that female students are too lazy to think and work hard, and science subjects need people who work hard; they are afraid to ask questions even if they do not understand; they are threatened by people who say science is difficult; they have no passion for science subjects; and science subjects require knowledge of mathematics, so female students know that they will have problems if they are not competent in mathematics. According to the boys, female students think science subjects are extremely difficult, are meant for male students, need a lot of time for discussion, which girls do not have as they are more concerned with their appearance than their performance. Other reasons stated include: science puts a lot of pressure on students, which females cannot handle, and they are not brave enough to become, for example, medical doctors. Some said female students were afraid of science, thought science was for males because it requires focus, or that science was an ungodly subject. Others said that females are scared of experimenting in laboratories.

As for the female respondents, many believed that science is the most difficult subject. They had observed that at the university, women never succeed when they opt for science subjects. Parents were also blamed for making their children feel threatened by mathematics. According to some respondents, girls have a low self-esteem, which is why fewer of them enjoy science subjects. They would rather opt for what is easy and enjoyable, and tend to choose commercial subjects, for instance.

Subjects in which it is most difficult to obtain high marks
Students were asked to indicate the subjects in which they considered it most difficult to obtain high marks. Most students indicated that mathematics was the most difficult subject. The reasons given for poor performance in mathematics included failure to comprehend its principles; corporal punishment meted out by mathematics teachers; and family problems that affect concentration. Mathematics, physics and biology were considered to require much practice. Some students indicated that they did not have people at home to help them with the subject. There was a view that biology requires a lot of reading and concentration, and that it is hard to understand. In some situations, students blamed the teachers for lack of skills or for leaving students to struggle on their own. Interestingly, students are also indicated that they had difficulty with English due to lack of exposure to the language, especially at home. They were not familiar with a wide enough vocabulary and did not have a good grasp of spelling and sentence construction. It would appear that a poor grasp of English may impede students’ ability to grasp mathematics and science subjects.

Prejudices against women doing science and technical subjects
There are no overt barriers against women taking science and technical courses. Some of the opinions expressed indicated that intelligent women perform well in such courses, and that women in general are encouraged to enrol in science-related subjects. However, some male students discourage women from enrolling in science, claiming that these subjects are reserved for men. They think that women are not intelligent enough to major in these courses, and that only ugly girls who work hard are likely to perform well in sciences.

Some secondary school teachers felt that science has always been a male subject and that female students do not have role models to look up to. They admitted that there are stereotypes regarding certain subjects. Domestic science is still considered a female subject, while woodwork is regarded as a male subject. Female students are less persistent, and mathematics problems require time, they said. According to them, a good number of female students prefer theoretical subjects to science or practical subjects, therefore showing they have a low level of commitment. In addition, science is a very “masculine” subject, which normally keeps students occupied long after class, and female students are unable to stay behind for such long periods.

Males are more “hands on” and hence excel in science-related subjects. Teachers are to blame too; they tend to encourage male students, while parents and the community communicate negative attitudes about science to girls at a young age, which lowers their confidence that they can do well in the subject. Science and mathematics are referred to as “monster subjects”, even in situations where schools make the effort to organise science fairs and clubs. These activities consistently attract male students who participate with great enthusiasm. Despite these negative attitudes, teachers noted that the situation is gradually changing, with science competitions encouraging all students to participate.

2. Tertiary education
2.1 The situation of students
In 2002/2003, women comprised 61 per cent of enrolment at tertiary level. However, only 2 per cent of males and 4 per cent of females of the relevant age group were enrolled in tertiary education (UNESCO, 2003, pp. 350, 358). The enrolment of women is equal to that of men only in the social sciences, business, and law (50 per cent each). Women dominate in education (88 per cent), humanities and arts (53 per cent), and health and welfare (94 per cent), but form a minority in science (30 per cent) and agriculture (46 per cent) (UNESCO, 2005, p. 359).

Administrators, lecturers, and almost all the students who responded to the question regarding barriers against women doing science and technical subjects indicated that there are no barriers at the institutional level. Prospective female students are free to apply, are admitted if they qualify, and some happen to do very well in science and technology. Those who do not enrol in the science and technology faculties have cultural reasons or feel that science is a male subject. It was also pointed out that there are fewer female role models in such subjects.

Difference in participation between males and females
It was observed that female students fully participate in lectures, but in technical subjects they tend to participate less. Some respondents indicated that they participate more than male students, while others were of the view that female students have a poor attitude towards practical subjects. Some indicated that female students, due to their good command of English, are very vocal during class discussions. One person gave this example: “In physics there are no female students this year, but whenever they are there, they participate well”.

Bridging courses
Most respondents, including administrators, lecturers and students themselves, stated that bridging courses help all students regardless of whether they are male or female. The courses help students gain confidence in the subjects in which their performance is not good; they help their induction into the culture of higher educational institutions; they upgrade their knowledge and skills; and they are oriented towards various courses. The major advantage is that students who make it through the bridging courses are then admitted into tertiary institutions or universities.

Support outside of lectures
Lecturers indicated that the main ways of providing assistance to students are through tutorials and scheduling time for consultations. In some cases, counselling is provided. Students are also referred to libraries. Some institutions, such as those teaching commercial subjects, have attachment programmes, which are of benefit to students.

Strengthening female performance in quantitative subjects
Several opinions were expressed as to how universities should strengthen female performance in quantitative subjects such as mathematics and statistics. These included the following:

• Many lecturers and students believed that the problems regarding mathematics and science start at primary level, where the teachers themselves do not have a good grasp of these subjects or the ability to teach them well. It was felt that the problem should be tackled in primary teacher training colleges.

• Partnership with secondary schools was considered to be important so that students’ foundation in these subjects can be strengthened and negative attitudes addressed.

• Students may not receive adequate career guidance and may lack information on career and job prospects.

• The teaching methodology at secondary and tertiary levels was considered poor since it is not practical enough. Using the Internet and ensuring that there are tutorials can help improve learning.

• There is a need to employ qualified teacher educators or lecturers with PhDs who trained in
pedagogy and who are capable of teaching the subjects well.

- Identifying students capable of taking these subjects in higher education can help boost the participation of women. Some form of incentives, such as prizes for those who perform exceptionally well, should be established. Competitions will also improve students’ performance.

- The availability of grants and scholarships will help motivate students.

- There is a need to advocate subjects for female students.

- Given the shortage of learning and teaching materials, e-learning can be introduced to enable females to study from home.

- Increasing the number of tutorials and practicals and helping students become more independent can help improve performance.

Criteria for selecting courses

Students who chose science courses indicated that they enjoy being challenged by a subject considered difficult by other students; that they liked science; that they were adventurous and wanted to be part of the evolution of science; and that they dreamed of following a career such as medicine. Those who were in a teacher training institution majoring in science and mathematics believed that there were more job opportunities as a mathematics or science teacher given the need for such teachers in the country. They also intended to continue to further education. The students in polytechnics and those who were doing technical subjects in teacher training institutions indicated that they chose the subjects they liked, and that they saw many job prospects, including opening their own business. However, some of these students indicated that they were doing the courses because there were no other subjects they could choose. The students who enrolled in commercial studies indicated that they were taking the courses because there were no other subjects they could choose. The students who enrolled in commercial studies indicated that they were taking the courses because there were no other subjects they could choose.

Completion of studies

A number of reasons were given by staff members of the institutions that participated in the study as to why female students fail to complete their programmes. At the Lerotholi Polytechnic, one view was that female students consider blue collar jobs to be for males. Other reasons were that:

- Students transferred to other institutions, particularly universities in other countries such as South Africa;
- Females fall pregnant and find it difficult to look after their babies and continue with their studies, or they get married and tend to be uncomfortable studying in institutions such as polytechnics, which are dominated by male students.

There was another group of respondents that was of the view that most students manage to complete their studies, and that only a small percentage do not. It was indicated that at university, for example, the majority of students are females.

College and university students expressed their views on why some students do not complete their studies, which include inter alia the following:

- They may fail their course and consequently lose their government funding and therefore have to terminate their studies.
- Delays in the release of funds means that students from poor socioeconomic backgrounds cannot continue with their studies.
- Students who take courses that they are not particularly interested in end up performing badly.
- Student fall into alcohol consumption or drug use.
- Female students get pregnant.
- Family problems.

Respondents were not aware of the difference in completion rates by gender.

Information and communication technology (ICT) and Internet resources

All the respondents indicated that there are computer laboratories and Internet facilities, but in most cases the server is not working. In some of the institutions there is a unit responsible for providing support to staff on ICT and Internet-related problems. However, even in such institutions, the service is still inadequate. On a positive note, almost all respondents indicated that there are efforts to improve or strengthen these facilities.

Staff from two of the participating institutions indicated that students are expected to search for information and communicate with their lecturers using ICT. However, they identified inadequate resources, particularly computers, as one of the problems hindering the use of ICT to support student learning. This view was shared by the students in all the institutions.

Students who reported on how they used the Internet to support their learning indicated that they do research, download materials such as lecture notes, slides and journal articles, and visit prescribed websites. However, they also indicated that there are serious problems regarding Internet facilities. In some institutions, the work stations are few in numbers so there is congestion. In other cases, the Internet is very slow, which discourages students from using it.

Improving student services

Some respondents were of the view that all the student services should be improved. The suggested improvements ranged from academic to recreational. Administrators, lecturers and students suggested that libraries as well as access to computers and the Internet should be improved; they suggested infrastructural improvements such as a heating system in the classrooms and other services like family planning and counselling. Also, the needs of students who get pregnant should be addressed. Some felt that the disclosure mechanism of examination results is not adequate and that some lecturers are rude. Students indicated that lectures provide support to students in all areas; they listen to students’ grievances, provide psycho-social support, provide assistance in a number of areas; they listen to students’ grievances, provide psycho-social support, guide students in their studies, and provide tutorials. Some lecturers indicated that their doors are always open to students.

Gender policy and related issues

The majority of staff and students in college or university were not aware of the existence of gender or gender mainstreaming policies. Almost all administrators and lecturers thought that gender mainstreaming would be facilitated by the presence of a gender policy. The current practice is to hire people on the basis of their qualifications rather than gender. Considerations are based on merit, and this practice is regarded as neutral.

Performance of mature students compared to direct entry students

The mature age entry system enables older people to access university education. On the whole, mature students perform much better than direct entry students. The mature students are serious about their work and more committed to their studies; they have their priorities clearly set, and their experience or educational background is an advantage to their performance. It was suggested that a study focusing on the performance of mature students should be undertaken if empirical evidence is to be established.

One of the mature students had this to say: “It took time for me to get used to the environment in which I am with young students. I thought they had fresh minds but have since discovered that they are mostly playful and disrespectful”. There was also a feeling that younger students discriminate against mature students. Mature students further indicated that balancing studies with family demands was a major challenge. Social problems caused by alcohol or unplanned marriages also have a negative impact on their performance.

Staff support outside the classroom

There were mixed feelings regarding the support received by students outside the classroom. On the whole, students indicated that the support received by students outside the classroom was positive. Some gave a positive note. Students indicated that lectures provide assistance in a number of areas; they listen to students’ grievances, provide psycho-social support, guide students in their studies, and provide tutorials. Some lecturers indicated that their doors are always open to students. On the negative side, students indicated that the times allocated for tutorials are not adequate and that some lecturers do not provide any assistance at all.

Strengthening gender research to improve girls’ and women’s education in Lesotho, with special reference to science, mathematics and technology

The majority of staff and students in college or university were not aware of the existence of gender or gender mainstreaming policies. Almost all administrators and lecturers thought that gender mainstreaming would be facilitated by the presence of a gender policy. The current practice is to hire people on the basis of their qualifications rather than gender. Considerations are based on merit, and this practice is regarded as neutral.
On the whole, none of the institutions that participated in the study had a sexual harassment policy. The general practice is to use the code of conduct and/or labour code to deal with any such cases. Respondents from one institution indicated that the general practice is to refer victims to the police. However, it was indicated that the problem is not common. Staff from one of the institutions said that there was a case involving a student and a lecturer, but that the lecturer resigned before action could be taken.

Views among the students regarding dealing with sexual harassment at the level of a policy differed. In some institutions the Student Welfare Office was said to be responsible for such cases or the culprits are dealt with by the moot court. Some observed that there is bias in that male students as opposed to their female counterparts are not always dealt with. It was also indicated that in some institutions students are expelled or reported to the police. However, some students indicated that they have never experienced any sexual harassment.

Two of the institutions that participated in the study had no policy regarding gender equity in the treatment of HIV-positive male and female students. The institution that does have such a policy encourages its community members to undergo HIV tests to know their status. This institution also has an AIDS counsellor in its Health Centre, whose major task is to educate people about prevention. Treatment is offered to all HIV-infected students and staff regardless of their gender. Second-year students indicated that they have never experienced any sexual harassment.

Dealing with students’ behaviour

A few respondents indicated that they were not aware of students engaging in prostitution or having sugar daddies or mommies, and that the allegations contained in the media are unfounded. Others felt that poverty and misuse of funds provided by the government for tuition all contribute to students resorting to prostitution, which can in turn lead to poor performance in studies, pregnancy, and contraction of sexually-transmitted infections.

College and university students are aware of the existence of sugar daddies and mommies. According to the reasons for this are mainly inadequate finances, delays by the government in sending scholarship funds, or the influence of town life. Students who engage in this type of lifestyle are prone to experience a variety of consequences: some get pregnant and have babies; they may spend too much time with their sugar daddies or mommies to the extent that their studies are affected; or they may contract sexually-transmitted diseases like HIV and AIDS. Those who engage with less educated sugar daddies or mommies tend to be discouraged from continuing their studies after being promised money, clothes, and even cars. The general perception is that the scholarship money is not adequate and that some students opt for other means of supplementing it. University students in particular stated that the phenomenon of finding sugar daddies and mommies is increasing at an alarming rate. They associate this with too much freedom away from parents and lack of self control in using sponsorship money.

Efforts against date rape in colleges and universities

It was only in one of the institutions that respondents indicated that date rape is a serious offence and that the institution has rules and regulations in place to control it. It is in this institution that a code of conduct is used to deal with incidences of date rape. Respondents in the other two institutions indicated that they were not aware of the existence of such a problem, but that if it occurred, it would be dealt with using the code of conduct or would be handled by a designated prosecutor.

Although the concept was new to most students, those who were familiar with it indicated that date rape is a problem, but that the victims do not generally report it. Date rape is associated with sugar daddies and mommies who tend to visit the campuses and drive students around in their cars. Women students are blamed for enjoying being driven around in expensive vehicles and getting into relationships with strangers to obtain money.

Effecting the anti-violence policy

The institutions do not have an anti-violence policy per se. There are, however, some strategies for handling violent behaviour. If violent behaviour is reported, the tendency is to use rules and regulations as stipulated in the students’ handbook, the code of conduct, the counselling facility, or the discipline policy. Students are also notified that any violent behaviour will not be tolerated.

Curriculum and gender mainstreaming

The curriculum does not specifically address gender in any form; it is unisex. Students are free to choose a programme they are interested in. The secondary school focus groups on the issue of curriculum confirmed that the curriculum does not discriminate. None of the institutions offers any training on gender mainstreaming.

Effects of institutionalised family planning

The majority of the administrators and lecturers could not respond to the question on the effects of institutionalised family planning as they were not aware of the extent to which family planning was institutionalised. However, there were those who indicated that health-related issues are dealt with during orientation, and that the health clinics do contribute to such initiatives. There was a feeling that family planning was not effective, since the number of pregnancies is on the increase. There was a suggestion that the family planning services should be supported by an infusion of stronger moral values if students’ attitudes are to change.

College and university students expressed mixed opinions regarding institutionalised family planning. On the one hand, a few students were of the view that the number of pregnancies is decreasing and that family planning is having an impact. The majority of students, however, thought that the number of pregnancies is on the increase, implying that family planning is not taken seriously. Some university students noted that more first-year students get pregnant, which indicates a lack of orientation for newcomers.

Academic support to female students to aid continuation

Of the very few students answered this question, one indicated that he went into the sciences because one of his brothers worked in that field and thus provided him with a role model. Another said he had wanted to do medicine, but the family had persuaded him to consider a teaching career. The majority of students claimed to be supported, both emotionally and financially, by their families in their choice of area of study, which enabled them to fulfil institutional requirements such as undertaking research.

Impact of pregnancy on female students’ studies

Pregnancy negatively affects female students’ studies as some of them fall sick during pregnancy, experience stress, or fail courses and have to repeat. They may miss lectures to consult doctors or attend
prenatal clinics. Pregnant students also suffer from depression, particularly in the case of a miscarriage. At the secondary school level, students who get pregnant more often than not prefer to abandon school, even though they are allowed by regulation to continue.

Impact of managing children during studies
Married female students depend on family support, especially from their husbands, or hire people to look after their children. However, there are times when they miss classes to attend to their children when they encounter problems with their employees or when a child falls sick.

Raising college fees and earning a living
Almost all the college and university students are financially supported by the government through the National Manpower Development Secretariat under the Ministry of Finance and Development Planning. Some do not get this support, which may be due to their failure to obtain a certain grade in the examinations.

Effects of earning a living on studying
Most students do not have to earn a living since they are sponsored by the government. However, the few who do so indicated that there are both advantages and disadvantages. The advantages are that the money generated helps to pay for transport or necessities, and that working in a relevant field allows them to gain knowledge that can be used in their studies. The disadvantages include missed lectures due to work, and failure of the course. Balancing time between work and studies can be difficult.

Effects of staying off campus
Students who stay off campus may have problems participating in study and discussion groups, using libraries, or being on time for classes. Some may stay in dangerous or precarious places and therefore fail to submit assignments on time due to safety reasons on route or high transport costs, or they may not be able to study if they have no electricity where they are staying. Nevertheless, there are still some who prefer to stay off campus since the accommodation is cheaper.

Costing of learning and teaching programmes
Some of the respondents were unaware of the costs of learning and teaching programmes or how the costs are calculated. Those who were aware indicated that the National Manpower Secretariat provides guidance on costing. Students pay the same fees across the board regardless of the extent to which a particular course might require expensive materials. However, one science student indicated that since the materials and laboratory equipment are expensive, they charge more money.

2.2 The situation of staff in tertiary institutions

Lecturers’ incentives
The incentives offered to teaching staff vary from one institution to the other. In one of the institutions there is a provident fund to which the institution contributes 10 per cent, while individual staff members contribute 5 per cent. In another, the attractive housing allowance and salaries are considered good incentives. The third institution has even more attractive incentives, which include a retention allowance starting at the level of senior lecturers and upwards, car loans, education allowances and housing allowances. However, despite these incentives, it is still proving difficult to retain lecturers.

Contractual obligations
The responses to the question on tri-contractual obligations indicated that teaching was considered the core business of each of the institutions. This is exemplified by the budgeting, which favours teaching. Lecturers were aware of the obligation to engage in research, but noted that research is hampered by lack of sufficient financial resources and the increasing number of students they are required to teach.

Type of institutional support provided to lecturers
Different views were expressed regarding the institutional support that lecturers receive in colleges and universities.

- Lecturers are encouraged to further their education.
- There are professional or academic networks with other institutions that provide opportunities to exchange academic activities.
- There are offices that provide support such as consultancy services for research and participation in conferences.
- Lecturers can participate in research associations.
- Guest speakers are invited to give presentations.

- Research grants, no matter how small, motivate lecturers to undertake research.

In one of the institutions, there is a Centre for Learning and Teaching, which runs workshops on critical issues. The availability of Internet in offices is a great asset as is the library. However, some respondents indicated that the institutions provided little support and that consequently lecturers were overloaded with high teaching workloads.

Impact of exam frequency on students’ performance
There are benefits in having examinations in both semesters. Administrators, lecturers and students shared the view that students tend to perform better since they have more time to study and fewer courses. However, if examination results are only published at the end of an academic year, this means that students are emotionally suspended. Also, if they fail a course, there is a long interval before they re-sit the examination, and therefore some of the content is forgotten.

Advancing female staff into leadership roles
Different institutions use different approaches to advance women to leadership roles. In one of the institutions, the number of females holding administrative positions is already higher than that of males, although no special effort was made to advance them to such roles. The general view is that all staff members are promoted based on merit. Individuals apply for a leadership role and are hired on the basis of their qualifications. Staff members are given the opportunity to further their studies and are promoted when they qualify for a promotion.

Administrators
The administrators and lecturers were asked about their professional qualifications. In many cases, the qualifications held by the administrators were related to the field in which they were working. In the Human Resources Department, for example, they had public administration or human resources qualifications. However, other administrators held qualifications that were not necessarily related to administration. The majority of those who participated in the study held high academic qualifications.

Staff members in the three institutions were asked about their career ambitions. These ranged from the intention to obtain a PhD or a Master’s Degree in a relevant field of specialization, to the aspiration of becoming a professor. The majority of the participants hoped to improve their qualifications. Others expressed other aspirations such as becoming a writer in one’s field of specialisation, involvement in educational research, or consultancy.

Challenges in research activities
Although for the majority of the respondents there were no problems related to research, one person identified lack of materials, out-dated information, and inadequate resources as existing problems.

The lecturers were of the view that students are guided by their lecturers on how to access sources of information in books and on the Internet. To a large extent, the students agreed with the lecturers. They indicated that staff do indeed support them through supervision, by pointing them to relevant research materials and websites, and through organising field trips. However, there were voices that mentioned that some lecturers do not provide the required assistance and that the staff merely allocate marks without giving students any form of feedback.

CONCLUSION
Lesotho has a higher percentage of girls and women enrolled in secondary and tertiary education institutions than boys and men. However, the percentage of women enrolled in science and technology courses at tertiary level is much lower than that of men. While institutions do not deliberately create barriers to prevent women from entering these courses, there are distinct prejudices commonly held by the society regarding which subjects and courses are more suitable for girls and women. Little has been done to overcome these prejudices. There is also a lack of policies, institutions and structures to address the problems and challenges faced by female students, such as the responsibilities thrust on female orphans to care for their siblings; the challenges of family planning and reproductive health; financial problems, etc. Neither staff nor students were aware of gender policies or gender mainstreaming strategies. They believed that if these were in place, they would assist them in addressing gender-related challenges. In terms of the situation of staff at tertiary
level, the staff themselves believed that both staffing and promotion were done equitably and professionally.

RECOMMENDATIONS

1. Establishing gender policies and gender mainstreaming institutions and structures within educational institutions

Both staff and students believed that the lack of institutionalisation of gender policies and of gender mainstreaming impeded the establishment of gender equality in science, mathematics and technology and the empowerment of women in general.

2. Providing bridging courses to help female students succeed in their studies

Bridging courses are highly recommended as they help students to improve their grasp of key subjects required for their studies. Such courses also improve students’ confidence.

3. Providing students with after-lecture activities

Lecturers indicated that the main means of providing assistance to students were through tutorials and scheduling time for consultations. In some cases, counselling is provided. In others, students are referred to the library, and some institutions have attachment programmes that also benefit the students.

4. Strengthening female performance in quantitative subjects

Positive steps can be taken to strengthen female performance in quantitative subjects such as mathematics and statistics. These include additional incentives and recognition for high performance; improvement of the quality of teaching, beginning at primary school; making the curriculum more relevant and more active; providing special inputs into teacher education colleges to increase knowledge and skills and to improve teaching methodologies; and in general, providing more academic support to girls and women.

5. Improving the services provided to female students

It is recommended that services provided to female students should be improved. These include having women’s clubs that can address their needs; formulating an institutional gender policy; being sensitive to female students’ needs, such as having a residential area for married women and a day-care centre for their children; encouraging women and making them aware that they are capable of taking science courses; providing extra mentoring or tutoring programmes for female students; introducing desk officers in the female students’ residences; having a counselling unit for the protection of women; and introducing career guidance. The provision of improved services to women should start at an early stage, such as in primary and secondary school, via career guidance and competitions.

REFERENCES

Some of the teachers, mainly the unqualified ones, do not provide a conducive learning environment or quality education.
The following methodology was used:

- These questionnaires were discussed with fellow researchers from Lesotho and Zimbabwe.
- The questionnaires were then tested and finalised.
- Sample institutions were selected.
- Visits were undertaken to the sample institutions, the questionnaires filled in, and focus group discussions and interviews conducted.
- Experiences were shared with other researchers through FAWE.

RESULTS/FINDINGS

1. Secondary education

Home-based factors

The role played by parents or guardians in the education of their children was emphasised. Parents have a very strong influence that extends even to their children’s choice of career. Mothers have a strong influence on both boys and girls, although more on girls, while fathers have a greater influence on boys. Teachers and siblings have less of an influence in terms of choosing influence.

According to the study, parents and guardians also play a critical role in choosing a secondary/high school for their children, as they first consider the best schools according to external examination results, and second the distance from the home to save on travelling costs. As a result, throughout the learners’ school career, they are monitored and directed by their parents or guardians.

The gap between the rich and the poor seems to be widening since children from poor families drop out of school more often than their counterparts from affluent families. According to the respondents, some children (mainly girls) have to care for sick parents as a result of HIV and AIDS, causing them to drop out of school. What follows in the family is poverty as a result of the death of one or both parents, and the older child is forced to look for employment in order to support the younger siblings. According to the study, it is the OVC that are expelled from school as they lack the certain requirements such as uniform, fees, or books.

In some families, due to parental illiteracy or poor educational background, going to school is not seen as important, so there is minimal parental motivation for their children to go school. The introduction of free primary education in Swaziland is a good initiative, as more children will have access to education, but this policy must be sustained. However, compulsory education should be the next step to oblige adults to send their children to school.

It was evident from the study that child labour is rampant, with OVC, especially girls, being the most affected. In addition, girls are sometimes abused by family members, may get pregnant, or contract sexually transmitted infections. The chances of re-entry into school are minimal as the education policy is silent on that issue, and there is no emphasis on encouraging re-entry to school. As regards boys, some of them have to take cattle to the dipping tank in the morning, meaning they reach school after break time. After school, they go to collect the cattle before resting and settling down to do their homework. Evidently, by evening both boys and girls are too tired to concentrate on school work.

Due to intensive family chores, children fail to do their homework and are punished at school. The majority (68.6 per cent of boys and 64.8 per cent of girls) spend less than three hours a day on chores, while 21.6 per cent of boys and 29.6 per cent of girls spend more than four and six hours a day on chores. 9.2 per cent of boys and 5.5 per cent of girls spend more than seven hours a day on chores: this latter group appears to be in full-time work. The heavy workload of most children definitely interferes with their studies.

Obstacles to learning

The distance between children’s homes and the school affects their participation as they must walk long distances and therefore get to school tired and hungry, and sometimes sleep during lessons. Respondents commended the government’s move towards child-friendly programmes that provide breakfast and lunch in schools.

According to the respondents, students who are sent away from school for various reasons are negatively affected. The student misses out on lessons and by the time she or he returns, catching up with the material covered is difficult. Respondents also stated that girls who are sent home for not paying school fees run the risk of being sexually abused on their way home alone.

The respondents further noted that education is largely academic, and there is need to introduce arts and life skills and include sports as a subject in secondary school, as is the case in primary school. Children, particularly girls, need to have role models in all disciplines taught, especially sciences, mathematics and technology through their female teachers. Seventy per cent of respondents in high schools were taught physical science by female teachers, followed by biology (38 per cent), mathematics (8 per cent) and agriculture (4 per cent). This shows the potential of females to succeed in science subjects; during the focus groups, participants emphasised the significance of mentorship, role modelling, and the importance of motivating and encouraging girls during the early stages of their education.

Some of the teachers, mainly the unqualified ones, do not provide a conducive learning environment or quality education, they have preferential treatment towards students, and some administer heavy corporal punishment. Such problems generate fear of being beaten or emotionally abused, and thus contribute to the student drop-out rate.

The fact that Swaziland has only a few higher education institutions discourages the spirit of learning in secondary school, since these institutions can only admit a few students while the others roam the streets without productive employment. As a result, high school leavers mainly aspire to get into the army or the police force, whose educational requirements are more attainable.

The majority of schools, particularly in the urban areas, are able to provide gender sensitive facilities in terms of science and information technology laboratories for boys and girls. Girls as well as boys are encouraged to enrol in science, mathematics and technical subjects. There is enough water to take care of sanitation, especially for girls’ needs.

However, violence on the school grounds or unsupervised zones such as corridors, the library, the car park, or the paths to the school are sites for fights and abusive activities such as drug abuse, physical and emotional abuse, and at times even sexual abuse. This was confirmed by various respondents. In fact, it emerged from our findings that schools are no longer
safe. This is demonstrated by the number of cases of teachers who have relationships with students. The most common type of relationship is between male teachers and female students. The Teaching Service Commission report (2007) confirmed this, and specified the number of teachers leaving the profession due to child sexual abuse. Another matter of concern is the approach used by teachers to intimidate students so they can retain their jobs. The report explains that these teachers operate in groups, making the children more vulnerable. Lastly, the education policy is silent on the issues of gender-based violence; hence most of the educators denied any knowledge of gender policy and gender mainstreaming.

Gender-based violence studies in the education sector

In 2003, a study was conducted by MOET to ascertain the degree of abuse in and around schools. The study revealed that abuse was a common occurrence, but rarely reported. The perpetrators were generally uncles and male teachers, most commonly male teachers, who abused female pupils. The reason why sexual abuse is not reported is that other teachers fear upsetting relationships with colleagues. The study also found that physical abuse is another common form of violence occurring in schools, but this, on the contrary, is reported. The reason for the high report rate is that beatings are not kept secret and the wounds are visible.

School curriculum

Different focus groups observed that the curriculum should integrate culture into education, which would include family life education. They proposed that home science be an integral part of the curriculum to allow students to gain a better understanding of science and technology. Almost half of both boys and girls. Schools start early in the morning with mathematics and science, and those who arrive late due to household chores are punished and miss lessons. Some girls resent this and eventually drop out of school.

As regards role models in educational careers, according to the Teaching Service Commission Annual Report (2006), male teachers form the majority in secondary schools (65 per cent), while 35 per cent were female. Of the 3,661 teachers holding a degree, 35 per cent were female with a male majority. According to the report, a large majority of secondary school head teachers were male.

The secondary school study revealed that, on average, boys and girls spend equal time on school work. Families recognise the importance of education for both boys and girls. Schools start early in the morning with mathematics and science, and those who arrive late due to household chores are punished and miss lessons. Some girls resent this and eventually drop out of school.

The boys and girls surveyed in secondary schools confirmed the statements made by lecturers and administrators about girls not performing well in science, mathematics and technology. Almost half of the girls and a quarter of the boys found mathematics difficult, although there was not so much difference in science.

Pregnancies and health-related issues

Section 10(5) of the Education Rule reads, “in the event of a pupil being convicted on an offence of the kind referred to in paragraph (4) or in the event of a pupil falling pregnant with a child, the headmaster may forthwith suspend such pupil from attending the school and forthwith report such suspension to the Director, who may take steps in regards thereto as he thinks fit”. The rule places the immediate responsibility for disciplining a pregnant girl on the headmaster by permitting him/her to suspend the pupil from school.

According to respondents, there is a general lack of understanding of maturation issues and human development stages. Consequently, parents fail to give their children appropriate guidance, which results in girls getting pregnant and dropping out of school. During adolescence, boys and girls become rebellious, causing misunderstandings between them and their parents. They may seek advice from friends and give in to peer pressure, culminating in problems such as pregnancy, mental disorders, failure among boys, and lack of seriousness with studies.

Here are some statements made by respondents concerning the effectiveness of family planning in tertiary institutions:

- "We still have cases of pregnant students in colleges.”
- "Family planning is only 50 per cent effective as there are many pregnancy cases especially among the second and third years."
- "We have a counselling team that addresses family planning among other topics."
- "Family planning is generally effective because condoms are available and are used while the rate of pregnancy is visibly lower in colleges."
- "I have no family planning knowledge but a few students still get pregnant and have to leave the college."

Girls have access to information, education and services on sexual and reproductive health and rights through the health clubs run by an NGO called the Schools HIV and AIDS Programme (SHAPE), Swaziland does not as yet have comprehensive legislation against trafficking, violence and sexual abuse.

Impact of HIV and AIDS on education

The stigma of HIV and AIDS experienced by children in schools and the community has psychological effect on them, which necessitates the provision of psychological support. A child-friendly school environment should cater for children’s health and the effects of HIV and AIDS, as is the case in some communities where NGOs like World Vision provide care to a select group of OVC in area development programmes. Schools engage in debates, drama and games, in which the major theme is providing information about HIV and AIDS, including the latest developments and available services of prevention, care and mitigation.

Where children care for sick parents or siblings, there is a danger of contracting the HIV virus. It is therefore important to strengthen home-based care in order to support these boys and girls. Through the programme of Rural Health Motivators and Caregivers in communities where these service providers work, personnel from schools and tertiary institutions should collaborate with them to assist the families with sick people. Teenage pregnancies are drivers of the HIV pandemic among the younger age bracket, while rape cases are still evident in institutions of higher learning as the study showed.

Shortage of tertiary education institutions

The government faces the challenge of increasing the number of tertiary institutions in order to cater for those who graduate from high school with good results but who cannot be accommodated in the university and other colleges.

2. Tertiary education

Tertiary education in Swaziland covers university education, teacher education, nursing, and technical or vocational education.

University education

Swaziland has one university – the University of Swaziland (UNISWA). Student enrolment at UNISWA has increased from 8,000 in 2000 to 12,000 in the academic year 2008/2009, student enrolment stood at 5,425, of which 49 per cent are female. According to the study, students, both male and female, are accepted based on merit and have equal opportunities for enrolling in any subject.

Female students’ enrolment in UNISWA is a bit lower than males (49 per cent) and observably lower in the faculties of science (30 per cent), commerce (46 per cent), social sciences (46 per cent) and agriculture (41 per cent). The health sciences and education faculties have more women (55 per cent and 51 per cent respectively). In the 2008/2009 academic year, there were slightly more women (51 per cent versus 55 per cent) in humanities, the Institute of Distance Education, and among postgraduate students. The three UNISWA campuses (Kwaluseni, Luyengo and Mbabane) are working towards gender equity, and in 2008/2009, the enrolment of female students ranged from 41 per cent to 55 per cent. Another positive development illustrated in the Vice Chancellor’s report for the academic year 2005/2006 was that female graduates were in the majority, comprising 64 per cent of those completing Master’s degrees and 55 per cent of those completing Bachelor’s degrees.

Gender stereotypes in the choice of subjects still exist in Swaziland. Women are highly represented in the traditionally female fields such as health sciences,
in which they comprise 55 per cent, whereas they are underrepresented in sciences, comprising only 30 per cent. At the moment, the education policy has no specific gender provisions; however, the present discussion should raise sensitivity about the matter.

Similarly at UNISWA, women are underrepresented among faculty staff (Report of the Vice Chancellor, 2005/2006). In health sciences there is a significantly large representation of female staff (21 women compared to 7 men, or 75 per cent).

**Teacher education**

The Ngwane Teachers’ College for primary teacher training has maintained a constant 58 per cent female enrolment since 2006/2007, which corresponds to the traditional situation in primary schools. At the secondary teacher education level, the William Pitcher College has managed to attain an intake of 50 per cent female and 50 per cent male teachers through a deliberate initiative to establish gender equality and through scholarship awards from the Government of Swaziland.

Focus group informants stated that in selecting teachers for training, personal attributes should be emphasised, such as a caring attitude, in order to create a positive learning environment for the children. Teachers should take interest in knowing each child, such as where they stay, with whom, and how they perform both academically and socially.

**Nursing**

Student enrolment at the Nazarene College of Nursing reveals a gender bias in favour of women, despite the fact that science and mathematics are a requirement for entry. Women, when motivated enough for a career that requires science and mathematics like nursing and medicine, strive to perform well in these subjects. The college receives a subvention from the Government of Swaziland. All its students receive government college receives a subvention from the Government of Swaziland. All its students receive government.

**Technical/vocational training**

One major goal of technical or vocational training in Swaziland is the development of a functional, gender-sensitive, affordable, and efficient system, with sufficient capacity to meet the needs of the economy, society, and the individual. However, the distribution of students in terms of gender between 2003 and 2005 shows that gender parity is lagging behind. Women dominate in one department (commercial), while in the other departments men form the majority. Generally, women made up less than 50 per cent of the enrolment. This could be attributed to the concept that technical and vocational subjects are meant for men. At the Swaziland College of Technology (SCOT), the 2008 female intake was low for the diploma in mechanical engineering (4 per cent), computer science (33 per cent), automotive engineering (4 per cent), architecture (25 per cent) and civil engineering (18 per cent). All these subjects require a high school credit in science, mathematics and technology. At SCOT, men perform better than women in mathematics. On the other hand, at the Nazarene College of Nursing, women do better in science. Specific programmes to improve performance in these subjects could produce better results.

**Prejudices against women in science, mathematics and technology**

Focus group discussions revealed widespread prejudice against women doing well in science, mathematics and technology. Some views expressed included the following:

- Practical work needs hands-on ability, and girls shun such disciplines.
- Women tend to dominate in oral presentations and language while men excel in quantitative subjects.
- Women have been culturally conditioned that certain things are for men and others for women.
- Some girls did not take these courses in high school so do not qualify for college.
- Women think that science and technical courses were designed only for men.

- “Women feel inferior because of the traditional belief that they are not assertive and do not want to experiment.”
- “The specialisation selection procedure discriminates against women.”

These inherited prejudices appear to affect the enrolment and performance of girls and women in the areas of science, mathematics and technology, with the one exception of women student nurses, who outperform men students. Although the Constitution of Swaziland places emphasis on gender equity, these prejudices still exist.

**Challenges of prostitution**

Lecturers and administrators had mixed feelings about prostitution in their institutions. Some denied it existed, while others gave reasons for such activities, explaining that it was mainly the vulnerable students who engage in prostitution due to financial constraints, while others do merely to have more money.

**Weak implementation of gender policies**

A gender sensitive approach that specifically addresses gender issues has been introduced in Swaziland education institutions to counteract stereotypes and present a new way of perceiving relationships between men and women. Yet, when asked about implementation of the gender policy, lecturers and administrators did not seem aware of it.

Moreover, according to MDET progress reports, no studies have been conducted on gender and curriculum per se: yet this is a critical area of intervention. Sexual harassment at secondary and tertiary levels appears to take place, but policy and strategy implementation to address this problem appear to be weak. According to the colleges/university respondents, there are cases of rape that are dealt with by the Dean of Student Affairs or special disciplinary committees within institutions. One hundred and seventy-six student respondents said that they had heard about cases of rape in their institutions. Schoolgirl pregnancies are dealt with at the school level by the school head, and pregnant students are generally excluded from further education. Much more specific work needs to be done regarding policies, strategies, institution-building and structures regarding gender equity policies.

**Using ICT**

Lecturers and students stated that they learn about ICT through being assigned topics on which they are to gather information on the Internet and make presentations; having ICT lecturers available to guide them during the laboratory hours; or through the use of computers and projectors to deliver lectures. These are some of the services that, according to the respondents, make students feel comfortable in institutions of learning. Some institutions pride themselves on the fact that their computer lab is always open during working hours, that a students’ Internet café has been set up, and that lecturers’ offices have computers connected to the Internet.

**RECOMMENDATIONS**

The study produced a number of recommendations covering:

1. **Retention of students**
   - Focus group discussions revealed that the main dropouts at secondary school level are OVC. Programmes to address the plight of these children are of critical importance to ensure that they do not drop out.
   - The challenge of girls and women who drop out of secondary and tertiary education due to pregnancy needs to be addressed. Most of them cannot resume their education.
   - Partial funding and offering more training resources are important interventions.
   - Constant mentoring and evaluation of services should be done.
   - Viable educational services must be safe, caring, supportive and academic. The government should hire only qualified teachers. In-service programmes should be organised to update teachers about innovations and contemporary issues.

2. **Weak gender mainstreaming**

While laws and policies exist to protect girls and women from economic exploitation, trafficking, violence
and sexual abuse, implementation may be weak. The following observations are made:

• The marriageable age is too low for girls, and they are left to fend for themselves in the face of harmful cultural practices.

• Swaziland does not as yet have comprehensive legislation against trafficking, violence and sexual abuse.

• Girls should have access to information, education, services and facilities on sexual and reproductive health and rights.

• All educational institutions should have gender mainstreaming policies, strategies and structures. At present these are weak.

3. Strengthening achievements in science, mathematics and technology

• Key decision-makers, including ministers, parliamentarians, public servants and the media, need to be sensitised regarding gender mainstreaming. Capacity-building on the gender policy components should be provided for administrators, service providers, and the students themselves in high schools and tertiary institutions.

• Teachers are key persons for improving the education system, with particular emphasis on gender mainstreaming. They need to be sensitised and their teaching methodology improved so they can perform optimally. There should be more sensitisation of teachers and the education stakeholders about the different forms of violence and the consequences attached to them.

• The country may have to engage in gender policy advocacy campaigns to sensitise and educate its population, particularly decision-makers in the country and SADC. Easily readable flyers and posters should be posted in strategic points, and electronic media jingles can play a crucial role in sensitising and educating Swazis about the gender policy.

• The successes, as evidenced in enrolments, should be formally monitored and documented for continuity, share among institutions in the country, and to promote further improvement in the future.

• From the literature review findings, there is a need for sex-disaggregated data to understand examination trends, patterns and levels of participation in schooling or employment, and to seek the underlying causes for the differences observed.

• There is a serious need to involve parents and guardians in matters of their children’s education and their teaching methodology improved so they can perform optimally. There should be more sensitisation of teachers and the education stakeholders about the different forms of violence and the consequences attached to them.

• There is a need to diversify curriculum to accommodate both practical and academic subjects at all levels.

• Role models in various subjects should be enlisted to visit primary schools as motivational speakers so as to provide career guidance to children at an early stage.

• Disciplinary methods such as caning and manual labour at school should be avoided and replaced by more positive forms of discipline. Corporal punishment leads to children, especially boys, bullying and using violence against each other.

• Service providers in education should mount programmes to guide teachers on children’s capabilities, such as in listening skills.

• Parents or guardians who play a crucial role in their children’s education should be assisted through government programmes that empower them to support their children’s learning.

• Respondents recognised that it was imperative that they make use of the Internet so as to access up-to-date information that is not readily available in books. Some of them have successfully carried out research and participated in online forums.

4. Sensitisation of decision-makers and participants

There is need to sensitise decision-makers and key participants regarding gender mainstreaming, as outlined below.

• MOET has established a toll-free phone line through which children and others can anonymously report cases of abuse. On receipt of such reports, the ministry sends officers to the school to investigate. These officers are trained to gather evidence required for successful disciplinary procedures by the Teaching Service Commission. If teachers are found guilty, they are dismissed. This is confirmed in the TSC report of 2006, which reports an increase in number of dismissals on the grounds of inappropriate relationships with students. Such cases of abuse a reliable for dismissal in line with the School Guide Regulation Procedures.

• Laws and conventions on the rights of children should be domesticated and enforced to make people educate and take care of their children.

CONCLUSION

Gender mainstreaming is something that should contribute to national political, economic, social and cultural development. It means that equal rights should be integrated into all initiatives, sector responsibilities and opportunities for both men and women, and that an individual’s rights, responsibilities and opportunities are not dependent on whether one is male or female. Gender equality requires that women and men benefit equally from socially valued goods, opportunities, resources and rewards. It means that in all spheres, equal opportunities are balanced. Other than considering opportunities, gender equality also examines outcomes. To achieve gender equality in education requires changes in institutions’ learning practices and social relations.

The study reveals that different institutions of higher learning and secondary schools in Swaziland have equal opportunities in enrolment, but regarding choice of subjects, there are predominantly female or male dominated disciplines.
Figure 2.1. Mathematics results for NCN students

Figure 2.2. Science results for NCN students

Figure 2.3. Geography results for SCOT students

Figure 2.4. Accounting results for SCOT students
REASONS FOR GENDER DISPARITIES IN SECONDARY AND TERTIARY EDUCATION IN SWAZILAND

STRENGTHENING GENDER RESEARCH IN EDUCATION IN AFRICA

Figure 2.5. Physical science results for NCN students

Figure 2.6. Students at NCN: Recommendations to improve mathematics and statistics scores

Figure 2.7. Factors causing drop-out at SCOT

Figure 2.8. SCOT students’ recommendations to improve mathematics and statistics teaching

Figure 2.9. Students’ ages at SCOT

Figure 2.10. Marital status of students interviewed at SCOT
Figure 2.11. Students interviewed by gender at SCOT

Figure 2.12. Factors that affect progress among students at NCN

Figure 2.13. Place of residence of students at SCOT

Figure 2.14. Who pays fees for students at SCOT?

Figure 2.15. Mathematics results for students at SCOT

Figure 2.16. English language results for students at SCOT
STRENGTHENING GENDER RESEARCH IN EDUCATION IN AFRICA

REASONS FOR GENDER DISPARITIES IN SECONDARY AND TERTIARY EDUCATION IN SWAZILAND

Figure 2.17. Marital status of students interviewed at NCN

![Marital status of students interviewed at NCN](image)

Figure 2.18. Students interviewed at NCN by age

![Students interviewed at NCN by age](image)

Figure 2.19. Students interviewed at NCN by gender

![Students interviewed at NCN by gender](image)

Figure 2.20. Female students’ highest qualifications at NCN

![Female students’ highest qualifications at NCN](image)

Figure 2.21. Males students’ highest qualifications at NCN

![Males students’ highest qualifications at NCN](image)

Figure 2.22. Reasons for choosing secondary school

![Reasons for choosing secondary school](image)
Figure 2.23. Drop-outs due to death of parent

Figure 2.24. Known cases of rape

Figure 2.25. Hours spent on domestic chores per day

Figure 2.26. Payment of school fees

REASONS FOR GENDER DISPARITIES IN SECONDARY AND TERTIARY EDUCATION IN SWAZILAND

STRENGTHENING GENDER RESEARCH IN EDUCATION IN AFRICA
Gender disparities in secondary and tertiary education in Zimbabwe

ABSTRACT

This study investigates the barriers that girls and women face in accessing, participating and completing secondary and tertiary education. The findings are analysed according to (a) macro-level factors; (b) legal-political factors; (c) school- and institution-related factors; (d) gender policies and strategies; and finally; (e) socio-cultural factors. The main macro-level factor was inadequate investment in education by the state, combined with the inability of most parents to pay fees. Thus poverty was found to be the main barrier at both secondary and tertiary level. Legal-political factors included the fact that only about 40 per cent of school-age youths could access secondary education, mainly due to high school fees. At the tertiary level, fees were also a barrier given the paucity of scholarships. The majority of barriers were school- and institution-related factors, such as lack of learning resources; inadequate guidance and counselling; and poor grounding and teaching in mathematics and science. As regards gender policies, the Ministry of Education, Sport, Arts and Culture (MOESAC) did not appear to have any such policy. The Ministry of Higher and Tertiary Education (MHTE), on the other hand, did have explicit policies, but these were largely ineffective in three of the four tertiary institutions the study visited. The other hand, did have explicit policies, but these were largely ineffective in three of the four tertiary institutions the study visited. The latter point was also raised by Masuko and Jirira (2009). While the Zimbabwe Government is keen to promote girls’ education rhetoric, the gap between policy and practice in girls’ education is considerable. The latter point was also raised by Masuko and Jirira (2009). While the Zimbabwe Government is keen to promote girls’ education rhetoric, the gap between policy and practice in girls’ education is considerable. The latter point was also raised by Masuko and Jirira (2009). While the Zimbabwe Government is keen to promote girls’ education rhetoric, the gap between policy and practice in girls’ education is considerable. The latter point was also raised by Masuko and Jirira (2009). While the Zimbabwe Government is keen to promote girls’ education rhetoric, the gap between policy and practice in girls’ education is considerable.

Although the World Forum on Education in 2000 stated that disparities in education would be eliminated by 2005, girls’ and women’s education continue to face serious disparities. Zimbabwe domesticated the SADC Gender Protocol in Education, which aims to “promote equal access to and retention in primary, secondary, tertiary, vocational and non-formal education” but in fact, there are major gender disparities at all levels of education in Zimbabwe. Zimbabwe enrolled 88 per cent of its children into primary school in 2007, yet 40 per cent of the age group proceeded to secondary school in the same year (UNESCO, 2010); and only 4 per cent of the age group went into tertiary education (2010 Legatum Prosperity Index). In 2009, girls comprised 49.8 per cent of junior secondary enrolments, but only 42.2 per cent of upper secondary enrolments (MOESAC, 2010). These figures suggest a massive attrition rate between primary (seven years), junior secondary (four years), upper secondary (two years) and tertiary education.

The objectives of the study were as follows:

1. Identify the gender-related barriers to access, participation and completion of programmes by women and girls in selected secondary schools, colleges and universities in Zimbabwe.
2. Determine whether current education policies and programmes promote girls and women in secondary and tertiary education in Zimbabwe.
3. Investigate the role of available gender policies, strategies and models.

The following research questions were asked:

1. What are the barriers that impede girls and women from accessing, participating in, and completing secondary and tertiary education programmes in Zimbabwe, particularly in mathematics, science and technology?
2. What policies and strategies are related to access, participation and completion of secondary and tertiary education in Zimbabwe?
3. What gender policies, strategies and models support girls’ and women’s education?

Literature review/hypotheses

According to Etim (2007), secondary school education prepares an individual to acquire relevant skills, as well as being important for social transformation. Because it is a transition to the individual’s participation in higher education, the dynamics of secondary school may be related to how an individual is able to access and participate in higher education. Huggins and Randell (2007) identified factors related to girls’ underachievement in secondary and tertiary education programmes and their impact on girls’ chances of advancing to higher education in Rwanda.

Randell identifies four levels where the gender gap is visible in secondary school: the macro-level, the legal and political level, the school level, and the socio-cultural level. The macro-level factors cited included poverty, inadequate educational resources, HIV and AIDS, continued economic dependence on former colonial powers, and disparities between urban and rural resources. Randell further discusses the legal and policy factors, which include lack of government funding for schools and teachers, lack of financial incentives for girls’ education, and the gap between policy and practice in girls’ education rhetoric. The latter point was also raised by Masuko and Jirira (2009). While the Zimbabwe Government is keen to promote girls’ education, it cannot afford to make it free. School fees, uniforms, books, and library and laboratory resources are a challenge, especially in rural schools. The issue of...
school fees is serious in Zimbabwe, since scholarships support very few students.

Endely and Ngaling (2007) noted that it was important that men in senior tertiary management in two universities. students, and inequality of the number of women to relationships between male lecturers and female such as sexual harassment, violence against women, examined the gender issues related to higher education, and practices that value boys above girls.

In Zimbabwe, a national affirmative action policy to admit girls into tertiary institutions with lower points exists, but there is little evidence that it is implemented in all institutions, even after the 2006 government directive for a 50:50 male-female enrolment (Tichagwa, 2009). Some programmes claimed to have a 30 per cent affirmative action policy in favour of female students, but there was no policy implementation plan available. except at one institution – the Women's University in Africa (WUA) – where an 85 per cent female to 15 per cent male enrolment is the policy.

Role models for girls are also limited. Female teachers in secondary schools comprised 43.5 per cent of the total in 2009 (MOESAC, 2010). There were 40.8 per cent of women in school administration, mostly in primary schools, with very few in management structures (Thabethe, 2009). In government, there are only 20 per cent of women in decision-making positions. (Gender Links Report, 2009), while at the universities the proportion of women lecturers was 22.0 per cent in 2009 (MHTE, 2009), with most in the humanities, the arts, and social sciences (Tichagwa, 2009).

Bennett (2002) identified the institutional policies that are supposed to increase the enrolment of women in tertiary education. These include affirmative action or the quota system, which she observed to be ineffective if the organisational culture was patriarchal and the policy differentially applied by department or unit.

Endely and Ngaling (2007) and Mulugeta (2007) examined the gender issues related to higher education, such as sexual harassment, violence against women, relationships between male lecturers and female students, and inequality of the number of women to men in senior tertiary management in two universities. Enedely and Ngaling (2007) noted that it was important to institute a sustainable gender-inclusive environment at a university through policies and practices that everyone could support rather than depending on a few feminist enthusiasts. Lack of financial support was another serious barrier. The issue of gender in higher education must be set within the cultural contexts of the wider society, as well as of the specific institution.

Inequity and inequality in education are major issues for feminist research. Both quantitative and qualitative research designs have confirmed that after primary school in sub-Saharan Africa, Zimbabwe, girls and women face barriers in terms of enrolment, completion, and of high achievement in education. This paper places the study of women/girls in education within the Gender and Development (GAD) conceptual framework that has a strong feminist bias. GAD focuses on both strategic interests and the practical needs of girls and women, helping the researcher to look for solutions to the root problems that hinder girls and women from participating equally in education. Underlying the GAD approach is the expectation of stimulating a transformative approach to education in favour of girls and women. GAD recognises that the position of women is a social construction, where men determine how girls and women are treated.

Methodology

The principal researcher trained the two research assistants/mentees before the data collection started. Twenty schools in two regions – Midlands and Harare – were selected: five rural and five urban schools in Midlands, and two peri-urban/rural and eight urban schools in Harare. The rural schools had to be within 40 kilometres of the provincial capital for convenience due to the severe fuel shortages in Zimbabwe at the time. Since distant rural schools could not be selected, this proximity to the capital may, however, have skewed the data. The small sample also means that the findings cannot be taken as representative of the whole school system. Rather, this study must be seen as a limited case study.

The National University of Science and Technology (NUST) in Bulawayo and the WUA in Harare were selected. NUST was of interest because of its emphasis on science, engineering and technology – programmes in which few women enrol, while WUA is unique in having a policy of enrolling 85 per cent of women students. One teachers’ college – Morgan ZINTEC – and the Harare Polytechnic were also selected.

Both qualitative and quantitative survey methods were applied during the study in order to collect in-depth information regarding the barriers to girls’ and women’s participation in high school and higher education. The qualitative methods included focus group discussions using semi-structured questionnaires, with open ended items. Quantitative data was collected through questionnaires. The questionnaires were first administered to 10 school pupils and 10 tertiary education students. Items that were unclear were revised, and the length of the questionnaires reduced.

A study of the percentage of women enrolled by subject at the University of Zimbabwe, the largest and most prestigious university in the country, showed that the enrolment of women in technical and science subjects remained very low (see Table 2.2).

Table 2.2 indicates that women constitute a lower percentage in all faculties, with the lowest percentage in commerce, agriculture, engineering, science and veterinary studies, all of which have fewer than 30 per cent of women students. This situation is similar in other universities.

Table 2.2. University of Zimbabwe student enrolment by gender and faculty, 2006

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<tr>
<td>Male</td>
<td>561</td>
<td>496</td>
<td>22</td>
<td>384</td>
<td>1025</td>
<td>189</td>
<td>60</td>
<td>611</td>
<td>276</td>
<td>57</td>
<td>576</td>
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<tr>
<td>Female</td>
<td>520</td>
<td>405</td>
<td>24</td>
<td>384</td>
<td>1025</td>
<td>243</td>
<td>60</td>
<td>619</td>
<td>275</td>
<td>56</td>
<td>575</td>
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<tr>
<td>Total</td>
<td>1081</td>
<td>901</td>
<td>46</td>
<td>768</td>
<td>2050</td>
<td>432</td>
<td>120</td>
<td>1226</td>
<td>551</td>
<td>113</td>
<td>1151</td>
</tr>
<tr>
<td>% Female</td>
<td>43.1</td>
<td>23.2</td>
<td>46.7</td>
<td>46.5</td>
<td>38.7</td>
<td>28.8</td>
<td>6.2</td>
<td>32.1</td>
<td>25.3</td>
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The research team then discussed each item for relevance to the research study.

In all the schools, the heads or deputy heads, senior teachers and heads of departments in science and mathematics were interviewed. At rural boarding schools, the boarding masters/mistresses as well as the senior woman teacher were also interviewed because they are responsible for the social welfare of the students. Questionnaires were administered to 150 students in forms 3-6. Since forms 4 and 6 students were preparing for their final examinations at the time of data collection, the research team worked with the senior students who were available so as not to disturb those classes. Groups of 30 students at the class level participated in general discussions in the focus groups.

In the rural co-educational boarding schools in Midlands, every tenth student by sex was included in the focus group, providing equal representation of girls and boys. In Harare, random selection of the focus group participants by sex was conducted. The size of the focus groups varied, the smallest group having seven respondents. In all the co-educational schools, the groups included both boys and girls. (There were problems in having an equal representation of girls in the science or technology programmes at college or university.)

At each of the tertiary institutions, the registrars, the senior woman teacher were also interviewed. (The skewed sample was due to the fact that it was a longer stay school. There are no feeding programmes at the schools.)

Observations on the water and sanitation infrastructure in the institutions visited provided qualitative information about the physical learning environment. This was included because there were situations when whole classes or entire schools would temporarily close because of lack of water and sanitation in both rural and urban schools, colleges and universities.

One limitation of the study was the small size of the sample. The study provides a snap-shot of the situation in the sample institutions, but cannot depict the whole system given that Zimbabwe has more than 1,700 secondary schools, 13 universities, 14 teachers’ colleges, and eight polytechnics. A second limitation is the small size of the study, as it was undertaken just before examinations and during a period of serious economic problems in the country, which made it difficult for researchers to travel or to obtain materials such as suitable software.

Results/findings
A total of 304 secondary school students took part in the survey, of which 200 were girls and 104 were boys. The youngest students in the sample were 14 years old and the oldest were 20 years old, with the modal age being 16 years. A total of 132 tertiary students took part, of which 65 were women and 67 men. The majority (82.6 per cent) were between 19 and 30 years old, while 12.1 per cent were between 31 and 40. Only one student was over 50 years old.

The results are divided into five categories: (a) macro-level factors; (b) legal-political factors; (c) school- or institution-related factors; (d) gender policies and strategies; and (e) socio-cultural factors.

(a) Macro-level factors
Poverty. Only about 40 per cent of the relative age group make the transition from primary to secondary school in Zimbabwe (UNESCO, 2010). This reported drop-out rate may be largely due to poverty, expressed in the inability to pay school fees or the need to earn a living. The state’s policy to have mainly day secondary schools means that many rural students who walk long distances, reportedly as much as 12 kilometres each way daily. Parents regarded such long walks unsafe for girls. Moreover, girls who walked long distances would get very hungry as they did not have a meal before going to school. Teachers reported that such students were lethargic and unable to concentrate. Because there are very few scholarships to enable girls to go to boarding schools, and boarding fees are beyond the reach of most parents, many students attend the nearest and cheapest school. There are no feeding programmes at schools, a challenge which should be tackled by the joint efforts of the state, NGOs, school authorities, parents and communities.

The sample leaned more in favour of urban and government schools, as 79.6 per cent of the students sampled were at government schools, 7.9 per cent at trust schools, 11.1 per cent at council schools, and 1.6 per cent did not detail the type of administration. In actual fact, government schools comprise only 12.6 per cent of the total secondary schools in the country, while trust schools make up 27.0 per cent and council schools 69.9 per cent (General Statistics Office, 2001). (The skewed sample was due to the fact that it was necessary to stay close to urban areas because of transport difficulties.) Government schools are divided between low density and high density suburban schools. Trust schools are high-fee-paying elite schools. While council schools are generally the poorest, urban council schools are much better off than rural council schools. Despite the fact that the 20 sample schools may have been more privileged than remote rural schools, their situation was nevertheless not very favourable.

(b) Legal-political factors
Fees. In Zimbabwe, secondary education is not free. Students pay a “school fee”, which is charged by the school authorities, and a “school levy”, which is controlled by the parents. Only 15 per cent of girls were on scholarship, the rest had their fees paid by parents or guardians. The cheapest school fees were US$10 to $20 per term for 59.2 per cent of the students. The most expensive school fees were above US$140 per term for 22.0 per cent of the students. The lowest school levies were between 55 and 520 paid by 40.5 per cent of students, with the highest above $100 for 6.6 per cent of students. Most of their parents could not afford to pay the fees.

The cost of fees was also a serious challenge at the tertiary level. Fees at NUST varied according to programme, with the most expensive being those requiring laboratory work at US$550 per semester. At WUA the fees were US$600 per semester. Polytechnics and teachers’ colleges charged US$300 per term. The percentage of tertiary students who benefited from scholarships was only 7.8 per cent. This indicates that the percentage of students from poor families attending secondary and tertiary institutions is very low.

(c) School- or institution-related factors
The sample leaned more in favour of urban and government schools, as 79.6 per cent of the students sampled were at government schools, 7.9 per cent at trust schools, 11.1 per cent at council schools, and 1.6 per cent did not detail the type of administration. In actual fact, government schools comprise only 12.6 per cent of the total secondary schools in the country, while trust schools make up 35.7 per cent and council schools 69.9 per cent (General Statistics Office, 2001). (The skewed sample was due to the fact that it was necessary to stay close to urban areas because of transport difficulties.) Government schools are divided between low density and high density suburban schools. Trust schools are high-fee-paying elite schools. While council schools are generally the poorest, urban council schools are much better off than rural council schools. Despite the fact that the 20 sample schools may have been more privileged than remote rural schools, their situation was nevertheless not very favourable.

Fees. Of the secondary school students, 37.2 per cent cited lack of school fees as the major problem preventing students from completing their secondary education. The state provides very little financial provision for secondary education and the low number of scholarships available for students from poor families. Some students (31.6 per cent) suggested that completion rates would increase if they studied harder. They called students who failed to complete “lazzy”.

Boarding. Only 10.9 per cent of students were boarders. This is in line with government policy after independence in 1980, when it expanded secondary education by building more day schools and fewer boarding schools. Day schools are cheaper for both parents and the state, and thus enable larger numbers of students to gain access to secondary schooling. However, the negative aspects of this policy include long distances to school, child labour practices, and inadequate nutrition. As a result, girls are too tired to do their homework. Moreover, long journeys are not considered safe by girls and their parents. One of the solutions developed in Zimbabwe is called the “Binga" model (a district in Zimbabwe where the population is scattered and poor). In this model, good quality boarding hostels are built, students are under adult supervision, but they provide their own food. This lowers the boarding costs considerably.

Learning resources. Secondary students were asked their views on how to improve their schools. A large number (37.2 per cent) felt that the main problem was lack of learning resources, for example lack of reading materials. Some students (31.3 per cent) cited lack of access to information and communication technologies, which they felt were important for their research projects. Concerning the learning resources at the schools, respondents stated that there were laboratories up to O-level in 71 per cent of the schools, but only 59 per cent had A-level laboratories, suggesting that science subjects were not available to about 40
per cent of senior students. Technical laboratories were found in 82 per cent of the schools. However, the quality of the school buildings visited was poor. Most classrooms were crowded, and there were poor health and safety provisions for girls, for example there was only one Blair toilet for all the girls in the school.

Study time. Time spent on tasks is one of the most important indicators of the quality of education. Seventy-seven per cent of students spent at least two hours on their homework per day. However, more than half of the students (54 per cent) spent 0-1 hour a day in the library, and only 28 per cent spent about 2-3 hours a day. There were computers available to 61.5 per cent of the students, but only 18.7 per cent spent 1-2 hours on the computer. This may be because although there were computers in the school, there were not enough to allow frequent usage.

Teaching quality. Among the students, both boys and girls were of the opinion that girls can do as well in the science subjects as boys. However, girls mentioned that they had very inexperienced and young temporary teachers who “don’t know anything”. Extra tutoring was required, according to 25 per cent of the students. Others recommended creating study groups, where someone capable could assist the weaker students. The problem of unqualified and inexperienced teachers, particularly for mathematics, science and technology, is relatively low, with the exception of communication and information science. The requirement of mathematics and sciences for entry is recognised as a barrier for women. According to the lecturers, there were only three or four women students in a class. Much of the problem stems from primary and secondary education, where pupils do not gain a good mastery of these subjects.

At the polytechnic, the number of female students in computer classes was equal to that of male students, and their attainment was equal. However, the number of women applicants has been very low for the traditionally male areas like engineering for the past decade.

Performance. Girls vehemently refuted the idea that they were only interested in marriage. They wanted to learn and do well in school, even if 71 per cent of them admitted that they had problems in school. They had a high absenteeism rate, due to period pains (according to 22 per cent), or having to look after a sick relative (according to 27 per cent).

All the tertiary lecturers interviewed stated there were no observable differences in performance between women and men. For example, the end of year examination results indicated that some of the best students were female in the NUST Faculty of Industrial Technology. The problem was that few women applied in the first place. Other comments the lecturers made were that women were thorough in their assignments, paid attention to detail in research and homework, and performed equally well to men on tests.

Student-lecturer relationships were considered cordial, with lecturers prepared to assist students. Lecturers who gave friendly advice and free tutorial support, counselling and assistance with difficult assignments were identified as the preferred lecturers by students.

Violence. On the question of school violence, 91 per cent of girls and 92 per cent of boys at secondary level agreed that they had experienced some form of violence at school. Twenty-nine per cent of the female respondents knew of at least one girl who had been raped at school; 82.2 per cent of students said they had received corporal punishment. The issue of violence, particularly of corporal punishment, appears to be endemic in Zimbabwean schools. A programme to stop or, at the very least, lower the level of corporal punishment in schools requires a change of policy and action by the ministry concerned, the teachers, the parents and the students. Such a high degree of violence used to discipline students indicates that the authorities are unable to discipline their students using modern methods. A concerted effort is necessary to ensure that these retrogressive practices are abandoned and replaced by more child-friendly methodologies.

While the study did not concentrate specifically on rape, the reported incidence is significant. Rape needs to be addressed, together with pregnancies and corporal punishment at secondary schools. It appears that these issues are ignored, to the detriment of the affected girls’ futures.

(d) Gender policies and strategies

Affirmative action. There was no recognised gender policy or strategy in the schools sampled, nor did any of them have a quota system for girls. Although the MHTE did have an explicit gender policy and strategy, only 24 per cent of the tertiary students were aware of an affirmative action policy at their college or university. Secondary school teachers were not aware of the MHTE affirmative action policies, and did not advise their female students on how they could benefit from these policies.

Tertiary staff were aware of the gender policy, but there appeared to be serious difficulties in implementing it. At NUST, the Industrial Technology programme required women to have only five points for entry, compared to 11 points for men. Yet the number of women applying was dwindling. WUA has a positive discrimination policy to recruit 85 per cent of women to 15 per cent of men. It begins by first enrolling older women, then younger women, then older men, and finally younger men. However, there is a marked difference according to faculty. For example in agriculture, animal science and horticulture, there are five men to one woman. This is because of the entry requirement, which is a diploma in agriculture, is a qualification few women have. There is a similar problem in the computer technology programme, where there are more men than women.
Female staff. The schools of 68 per cent of the respondents were run by male heads, and only 17 per cent of the students had ever had a female deputy head. This was in contrast to 42.4 per cent of all secondary school teachers in Zimbabwe (MOESAC, 2010). The dominance of males in decision-making positions characterises the education system. A more consciously gender-sensitive approach to the appointment of school heads is essential, as the low number of women heads may have a negative effect on the enrolment of girls.

The only female senior lecturer in applied sciences at NUST felt that her concerted efforts to support women in the programme had not succeeded, and that the concept of being a ‘role model’ appeared not to work. She believed that as long as the number of tenured women in engineering and the sciences remained low, it would be difficult to attract girls into the engineering programme. So far she was the only female engineering lecturer with a doctoral degree. She expressed the opinion that an affirmative action policy could only work when students were still at high school. (The ratio of women to men at NUST was generally 2:1.)

Pregnancy. As regards the policy on pregnancy, the majority of secondary students (71.1 per cent) knew of a girl who had dropped out of school because she was pregnant, but only 17.1 per cent knew of any girl that had returned to school afterwards. The focus group members revealed that no girl wanted to return to the same school after giving birth for fear that others would mock her. They stated that instead, the pregnant girls either married or stayed out of school to look after their babies, while boys continued with school even if they had impregnated someone. The present government policy is that a girl can return to school after giving birth, but to a different school. According to the discussions, this policy is a failure, as there is no support system for such girls in terms of sensitising the school authorities, the parents or the students. While the problem appears to be widespread, it has not been seriously attended, nor is there any funding for such programmes from the state or NGOs.

Both men and women students in tertiary institutions felt that pregnancy did not affect performance. Some students at WUA stated that female students who did not submit good assignments would be given higher marks by unscrupulous male lecturers in exchange for sexual favours, although they could not confirm the extent of the problem. Students were not aware whether or not WUA had a sexual harassment policy.

Lecturers and administrators in tertiary institutions as a whole did not find the issue of sexual harassment to be important. Instead, they felt that students were adults who were free to make their own choices. Only 32 per cent of women students felt that male lecturers took unfair advantage of women students. These results show that clear and detailed sexual harassment policies do not exist in tertiary institutions, and that the attitudes in these institutions condone sexual harassment as part of the normal behaviour of adult men and women.

Science, mathematics and technology. NUST had created an innovative intervention working with the feeder schools around Bulawayo, so that more girls would be informed about programmes they could access if they persevered in sciences and mathematics. The project aimed to change the attitudes and beliefs held by students at these schools, hopefully enlarging the base for recruiting girls in universities. However, since the project was in its pilot stage, further research is required to see if the transition from high school to university can be positively influenced.

Table 2.4 above demonstrates the low percentage of women enrolled in the industrial manufacturing programme at NUST in 2007. This distribution also illustrates the difficulty encountered in recruiting and retaining women students.

In general, although the colleges were supposed to have affirmative action policies, most prospective students did not know about them. Consequently, there did not seem to be a conscious effort to increase the number of women in the various programmes, even if traditional sectors such as secretarial studies and home industries had more women. Furthermore, since prospective students are not aware of the affirmative action programme, they do not directly dialogue with the admissions department to be better known. Most secondary school teachers were not aware of the affirmative action policy in higher education institutions. Consequently, the benefits of the affirmative action programme were thus far insignificant.

Table 2.4. Women students in industrial manufacturing programme at NUST, 2007.

<table>
<thead>
<tr>
<th>Part</th>
<th>Women students</th>
<th>Total students</th>
<th>%women</th>
</tr>
</thead>
<tbody>
<tr>
<td>I (day)</td>
<td>7</td>
<td>42</td>
<td>16.7</td>
</tr>
<tr>
<td>I Parallel (evening)</td>
<td>2</td>
<td>22</td>
<td>9.1</td>
</tr>
<tr>
<td>II (day)</td>
<td>6</td>
<td>29</td>
<td>20.7</td>
</tr>
<tr>
<td>II Parallel (evening)</td>
<td>0</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>III (day)</td>
<td>4</td>
<td>41</td>
<td>9.8</td>
</tr>
<tr>
<td>III Parallel (evening)</td>
<td>1</td>
<td>15</td>
<td>6.1</td>
</tr>
<tr>
<td>IV (day)</td>
<td>2</td>
<td>30</td>
<td>6.7</td>
</tr>
<tr>
<td>IV Parallel (evening)</td>
<td>0</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>V (day)</td>
<td>4</td>
<td>29</td>
<td>13.8</td>
</tr>
<tr>
<td>V Parallel (evening)</td>
<td>4</td>
<td>34</td>
<td>11.8</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>276</td>
<td>10.5</td>
</tr>
</tbody>
</table>

WUA did not have a counselling or student affairs programme to support students, nor were there any records of the reasons why students dropped out of a programme or the university before completion. This lack of support for students appears to be a problem in all institutions.

(e) Socio-cultural factors

Level of education of parents. At secondary school level, about half of the parents had some secondary education and were in formal employment. Fathers were better educated than mothers, with half of fathers and a third of mothers having a secondary education. More fathers (44.1 per cent) were in formal employment than mothers (30.6 per cent). It appears that secondary education was more easily available to the children of the better educated who were in formal employment.

Given the situation where a substantial number of parents, particularly mothers, did not have the opportunity to get a secondary education themselves, it is important for the school and society to provide support for such parents so that they can assist in their children’s education. The school development committees, which exist in every school, can help parents play a greater role in promoting and supporting the education of their children than at present, where their role is mainly to pay school fees. Parents should be more proactive, not only in the education of their children but also in career guidance, a role for which they themselves require information.

Domestic tasks. Chores at home in influence performance at school by reducing time on tasks. These chores affected girls more than boys, and included taking care of siblings, taking care of the sick, house work and field work.

Subject choice. The majority of female secondary students (49.3 per cent) favoured arts subjects, followed by sciences (30.6 per cent), and the least favoured were the commercial subjects (20.1 per cent). However, when asked what jobs they desired, 42.5 per cent wanted to work in the science field, 24.5 per cent in the arts, and 23 per cent in preferred commercial jobs, contrary to the traditional view that females do not want to be in the sciences. Clearly, their subject choices would make it difficult, if not impossible, for them to specialise in the science-focused careers that they said they wanted.
Age of students. When women were asked why they attended WUA at over 25 years, most stated that they could not afford the fees earlier. Some mentioned that their parents had preferred to pay for the education of their sons before that of their daughters. Some women said that they had to work after obtaining a certificate or diploma before they could enter university. Others had married early or had children to care for. (WUA allows special entry to women over 25 years of age.) The students said that they were attracted to WUA because it had convenient hours for more mature women to attend classes; for example, there are three parallel programmes that run in the evening, during school holidays, and on weekends. Moreover, they found that WUA was not prone to student strikes (common in other universities since 2005). As for the choice of programme, interest in a programme was the most common reason mentioned for choosing it.

Barriers to female education. When students were asked their opinion about the barriers females face in succeeding in higher education, 85 per cent noted family and cultural problems such as prejudices held by society about what women can do academically. One factor was the division of labour in the home, which entrenched the idea that certain programmes are for men and others for women. Others saw the role of women as mothers and caregivers being given priority over education. Parents were blamed for not allowing girls to move away from home for fear that they would get pregnant and lose their desirability as a wife. Some women students limited their own academic progress because high achievement could mean losing their desirability as a wife.

As regards entry requirements, the focus groups indicated that women attained lower grades at high school, or did not do the technical subjects required for entry to the polytechnic and technical colleges/universities. Administrators, however, noted that women did not apply for programmes even when they had good grades. Poverty was cited by one registrar who believed that women were considered for college/university as long as there was no competition for resources with the boys and men in the family.

Sexual health and behaviour. Some women students engaged in prostitution in order to pay their school fees, as was stated by 9.1 per cent of the students sampled. One student said, “If no harm to the student takes place, and someone is able to pay their fees in full, why condemn prostitution?”

Family planning education was not available at secondary school level, but it was available at tertiary level, where 40.2 per cent of students said that it was effective. However, this matter merits more research.

CONCLUSION

The study has identified and reinforced the argument that subject choices at secondary school have a strong bearing on subject choices in tertiary education. Career counselling and guidance at secondary level is crucial if girls are to be aware of the relationship between a subject and a career path. Linkages need to be established between upper secondary schools and tertiary institutions, so that secondary students are better prepared to make good use of tertiary institutions.

The quality of education that girls and women acquire depends on the resources and learning materials, as well as the physical assets that the government and stakeholders can provide. Quality teaching in secondary schools, particularly in mathematics, science and technology, is also essential. Finally, having role models is important, and the fact that there were fewer women in administrative and decision-making positions than men may account for girls’ and women’s choice of subjects.

POLICY RECOMMENDATIONS:

1. Nearly all secondary students indicated that the lack of learning materials such as textbooks, library books, computers and Internet constituted a major barrier to successful study. This was particularly so for science subjects. Provision of learning materials is a reasonably low cost intervention that could easily be implemented. Special attention should be paid to those that promote gender issues.

2. The next most important issue is the need to improve the quality of teaching and learning in mathematics, science and technology. Short courses for secondary pupils can assist girls to perform better in these subjects. In-service teacher upgrading courses are also urgently required.

3. The endemic use of violence in secondary schools through the practising of corporal punishment needs to be addressed. The incidence of school rape was also significant: this issue, which is generally ignored, requires attention.

4. Schoolgirl pregnancies affect a significant minority of girls, indicating that family planning education does not receive much attention in secondary schools. Girls who fall pregnant generally do not return to school, despite the policy that they are allowed to do so. The school authorities, together with the school development committees, should address this issue from a family and community point of view. Presently, it is dealt with mainly through a central ministry directive, and the people actually responsible at the local level are not involved.

5. MOESAC should develop a gender policy to promote the enrolment of girls in secondary schools.

6. Although MHTE has a clear gender policy, its implementation is very weak. It should to link up with upper secondary schools so that schoolgirls are well informed about university and career prospects before they apply to universities. There is also need to introduce more proactive interventions to support women students who are already in tertiary institutions.

7. Both ministries need to work out and implement detailed sexual harassment guidelines and regulations in order to lower the incidence of sexual harassment and rape.

8. Parents, especially mothers, can play a pivotal role in guiding their daughters through secondary and tertiary education, and towards rewarding careers. The school development committees can play an important role in sensitising parents, especially mothers, on this important role. Support materials should be developed to help these committees in their parent education programmes.

9. The WUA strategy of filling up places with women first before considering male applicants can be adopted in other tertiary institutions.

10. Socio-cultural prejudices need to be addressed, so that high academic achievement by girls and women is seen as an asset to the family and to society.

REFERENCES


Access to and completion of education at all levels remains the primary challenge that developing countries must overcome if they are to achieve their development objectives. Accordingly, countries in sub-Saharan Africa have taken steps to ensure that young women enjoy equal educational opportunities at post-secondary level. Yet female students face challenges that undermine their academic success, wellbeing and career prospects.

Can public universities cater for the increasing numbers of young women who now have access to higher education? What are the patterns of admission and rates of success for women in higher education? What factors contribute to women’s academic failure and what strategies do they employ to ensure they succeed in their university studies? What are their career prospects once they graduate from higher education?

In Ethiopia, women account for 24 per cent of total enrolment in higher education, many of them benefiting from the government’s affirmative action policy that supports the admission of women students. At Addis Ababa University alone, however, 9 per cent of women had been dismissed for academic failure by the end of the second semester in 2007/2008, compared to less than 4 per cent of male students. The study carried out by the University’s Institute of Gender Studies brought to light problems including harassment, violence and gender stereotypes in institutions of higher education that contribute to women’s academic failure. Yet women have devised coping strategies to overcome these challenges and ensure their academic success and wellbeing.

In Senegal, where women make up approximately 35 per cent of tertiary education enrolments, demand for post-secondary education is far greater than the capacity of tertiary institutions. The Laboratoire Genre et Recherche Scientifique at Cheikh Anta Diop University in Senegal has found that the rapid development of private higher education institutions in the country has created academic opportunities for women. The high percentage of women enrolled in these institutions drops significantly after the first year of study, however, and the research conducted by Laboratoire Genre signals a number of areas in which private sector education is unfavourable to female students.

The studies indicate that policies to increase female enrolment in post-secondary education must be accompanied by measures that support women to successfully complete their education and acquire skills relevant to the contexts of their labour markets.
Discrimination against female students in higher education manifests itself in physical and social forms.

**ABSTRACT**

The rate of female enrolment in Ethiopian higher education institutions is increasing, largely due to the policy of affirmative action according to which women are admitted to the institutions with a grade point average lower than that required for male students. However, many of the women students, particularly those admitted through affirmative action, do not complete their studies. Those who drop out may have a weak academic background, or experience problems related to financing or adjustment, especially if they come from the rural areas.

Higher education institutions in Ethiopian do not have a friendly environment for female students. For one thing, they are very much outnumbered. In addition, harassment and violence against them are common, as are gender stereotypes that push female students to behave in a traditional manner. Nevertheless, many of the universities do not have a harassment policy, and those that do not implement them strictly. The female students also complained about the lack of toilet facilities, scarcity of water, and lack of space in the libraries and recreational facilities. They avoid going to certain places that are considered to belong to men. However, many of these women are not simply victims and passive observers. They use a variety of coping strategies to make sure they succeed in their studies.

**BACKGROUND**

A key goal of Education for All (EFA) is the elimination of gender disparities by 2005 and the achievement of gender equality in education by 2015. Being fully committed to EFA, Ethiopia has taken a number of measures to expand access to education and to increase the completion rate of all children in general, and girls in particular. The Constitution of the Federal Republic of Ethiopia clearly stipulates that women/girls are given the right to enjoy full equality in every aspect of their lives. The current Education and Training Policy aims to provide an education that would enable the eradication of attitudes, stereotypes and practices that negatively affect women's education. It further states that attention should be given to gender issues in the design and preparation of school materials, including curricula and textbooks. Quotas have also been set to increase the number of female teacher trainees, along with financial support to women and vulnerable groups.

All the Education Sector Development Programmes (ESDPs) include measures that address gender gaps. The current ESDP III (2005-2011) aims to increase access, as well as completion and transition rates of girls, and to close the gender gap. Some of these measures are: building schools near communities to reduce the drop-out rate; preparing reference materials that depict women role models; creating accountability in the school system for the enrolment and performance of girls; and strengthening the support given to women enrolled in higher education institutions.

In addition, the Ministry of Education (MOE) has opened the Gender and Equity Department, whose responsibilities include, among others, addressing gender issues in education. As a result of the various measures taken by the government, NGOs and the private sector, the enrolment of girls has increased, especially at elementary level, and the enrolment at the higher education level has slowly picked up. For example, according to MOE statistics, in 2007/08 the Gross Enrolment Ratio (GER) for primary school was 95.6 per cent, and when this is disaggregated by sex, the GER for girls is 90.5 per cent and for boys 100.5 per cent. Looking at secondary schools, the GER for the first cycle (i.e. grades 9 and 10) is 37.1 per cent. The sex disaggregated data reveals that the GER for girls is 29.6 per cent, while it is 44.4 per cent for boys. The GER drops in the second cycle of secondary education, i.e. grades 11 and 12, where the total GER is 5.8 per cent; 7.8 per cent for boys and 3.8 per cent for girls. The figures show that there have been increases in enrolment over the past five years (MOE, 2009).

The increased rate of enrolment of girls in higher education institutions is illustrated below.

**OBJECTIVES**

The general objective of the current study is to investigate the problems contributing to academic failure of female students in Ethiopian higher education institutions, and to suggest possible measures to mitigate these problems.

The specific objectives are to:

- look at the pattern of admission and success rates of female students in various higher educational institutions in Ethiopia;
- study the various problems that female students in higher education institutions face;
- analyse the specific reasons for the failure of female students in higher education institutions in Ethiopia.

**Table 3.1. Undergraduate enrolment in higher education in government and non-government institutions, 2003/04 – 2007/08**

<table>
<thead>
<tr>
<th>Year</th>
<th>Male and female</th>
<th>Female</th>
<th>% female</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003/04</td>
<td>98,404</td>
<td>20,418</td>
<td>20.7</td>
</tr>
<tr>
<td>2004/05</td>
<td>138,159</td>
<td>33,146</td>
<td>19.1</td>
</tr>
<tr>
<td>2005/06</td>
<td>173,901</td>
<td>43,066</td>
<td>24.8</td>
</tr>
<tr>
<td>2006/07</td>
<td>203,399</td>
<td>52,862</td>
<td>26.0</td>
</tr>
<tr>
<td>2007/08</td>
<td>263,001</td>
<td>63,317</td>
<td>24.1</td>
</tr>
</tbody>
</table>

• investigate whether these problems differ for students from urban versus rural areas;
• explore the coping strategies that female students apply to address the problems; and
• suggest strategic measures to reduce the stumbling blocks observed.

LITERATURE REVIEW

This section attempts to review relevant studies undertaken on problems and coping strategies of female students in higher education institutions.

1. Enrolment and dismissal

In Ethiopia, the percentage of female students in higher education institutions is much smaller compared to their male counterparts. As indicated above, in the 2007/08 academic year, the percentage of female students enrolled in government and non-government institutions was only 24 per cent (MOE, 2009). This unfavourable representation worsens as one looks at graduate programmes. The same document reveals that in the academic year 2000/01, the percentage of female students in postgraduate second degree programmes was 10.9 per cent, and for PhD, 2.8 per cent. Another study showed that among the students who enrolled in Debub University (Southern Ethiopia) in 2003/04, female students made up only 23.6 per cent of those enrolled in agriculture; 18.41 per cent in engineering; 16.0 per cent in natural science; 28.5 per cent in social science; and 25.6 per cent in health science. In addition, a significant percentage of women were dismissed by the end of the academic year: 46.7 per cent and 45.0 per cent. Female students are also prevented from joining some disciplines by their inability to attain the required grade point average (GPA). As a result, many of them are found in social sciences and education (Yelfign, 2001).

2. Problems encountered by female students

2.1 Academic problems

One major reason for academic failure among girls is the weak educational background that many of them, especially those from rural areas, acquire during their elementary and secondary school years. Many female students complain that they did not have sufficient preparation for college because of lack of trained and qualified teachers, shortage of teaching-learning materials, and other necessary facilities and equipment. Once they enter university, girls face a number of academic-related constraints. These include unavailability of academic support, guidance and counselling; lack of sufficient teaching-learning materials like reference books; and unqualified teachers. Academic-related problems are exacerbated by adjustment problems such as movement away from home; change of peer group; and the formation of new friendships. The academic problems and the demands of adjusting to a new environment cause stress to all students, particularly to female students.

2.2. Financial problems

Many students in higher education institutions in Ethiopia also face financial problems. They may be unable to buy materials necessary for their studies or personal items. Students somehow survive with very limited financial resources at university since lodging and food are provided, but female students need some money to take care of, at least, their sanitary needs.

2.3. Personal problems

A number of studies indicate that female students reported homesickness, family problems, and relationship problems as causes of concern. These problems, in addition to others, contribute to the stress they experience and negatively impact on their academic performance.

2.4. Social problems – social environment, harassment and socialisation

The higher education institutions in Ethiopia would appear to be male dominated. For example, at the three universities studied, in the academic year 2007/08, there were more male students enrolled. Women accounted for only 32.7 per cent of the enrolment in Addis Ababa University, 22.0 per cent in Hawassa, and 21.0 per cent in Gondar (MOE, 2009).

The lack of women professors is another characteristic of universities in Ethiopia. In the 2006/07 academic year, women lecturers accounted for only 9.8 per cent of the teaching staff in Addis Ababa University, while they made up 9.8 per cent and 9.2 per cent in Hawassa and Gondar universities respectively (MOE, 2009). There is therefore a consequent lack of women mentors and role models.

Discrimination against female students in higher education manifests itself in physical and social forms. At Addis Ababa University, women students noted that seating in the cafeteria is separate for men and women, so women have to wait for other women to finish their meals before they can be seated. There seemed to be an unwritten law prohibiting women from entering the students’ lounge, and the graffiti on campus was disturbing and upsetting for women.

2.4. Personal problems

A number of studies indicate that female students reported homesickness, family problems, and relationship problems as causes of concern. These problems, in addition to others, contribute to the stress they experience and negatively impact on their academic performance.

1. Enrolment and dismissal

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2. Problems encountered by female students

2.1 Academic problems

One major reason for academic failure among girls is the weak educational background that many of them, especially those from rural areas, acquire during their elementary and secondary school years. Many female students complain that they did not have sufficient preparation for college because of lack of trained and qualified teachers, shortage of teaching-learning materials, and other necessary facilities and equipment. Once they enter university, girls face a number of academic-related constraints. These include unavailability of academic support, guidance and counselling; lack of sufficient teaching-learning materials like reference books; and unqualified teachers. Academic-related problems are exacerbated by adjustment problems such as movement away from home; change of peer group; and the formation of new friendships. The academic problems and the demands of adjusting to a new environment cause stress to all students, particularly to female students.

2.2. Financial problems

Many students in higher education institutions in Ethiopia also face financial problems. They may be unable to buy materials necessary for their studies or personal items. Students somehow survive with very limited financial resources at university since lodging and food are provided, but female students need some money to take care of, at least, their sanitary needs.

2.3. Personal problems

A number of studies indicate that female students reported homesickness, family problems, and relationship problems as causes of concern. These problems, in addition to others, contribute to the stress they experience and negatively impact on their academic performance.

2.4. Social problems – social environment, harassment and socialisation

The higher education institutions in Ethiopia would appear to be male dominated. For example, at the three universities studied, in the academic year 2007/08, there were more male students enrolled. Women accounted for only 32.7 per cent of the enrolment in Addis Ababa University, 22.0 per cent in Hawassa, and 21.0 per cent in Gondar (MOE, 2009).

The lack of women professors is another characteristic of universities in Ethiopia. In the 2006/07 academic year, women lecturers accounted for only 9.8 per cent of the teaching staff in Addis Ababa University, while they made up 9.8 per cent and 9.2 per cent in Hawassa and Gondar universities respectively (MOE, 2009). There is therefore a consequent lack of women mentors and role models.

Discrimination against female students in higher education manifests itself in physical and social forms. At Addis Ababa University, women students noted that seating in the cafeteria is separate for men and women, so women have to wait for other women to finish their meals before they can be seated. There seemed to be an unwritten law prohibiting women from entering the students’ lounge, and the graffiti on campus was disturbing and upsetting for women.

Harassment and violence are also common. At Addis Ababa University, women explained that they were not able to work in the library because they were continuously pestered by men. They further pointed out the preconception among male students that girls cannot refuse to go out with them, and those who do are verbally and physically abused. In many cases when women are sexually harassed, they are blamed for being dressed inappropriately, for being in the wrong place at the wrong time, and for being provocative in general.

The prevalent gender roles also influence the expectations that others have on how women should behave and the relationships they should have with men. Interviewees at Addis Ababa University explained that female students who fight for their rights are usually insulted by male students. Tesfaye (2007), in his study of one university in Ethiopia, recounted that if a male offers academic assistance to a female, it is usually expected that she will return him the favour through some kind of sexual payment. He further elaborated that female students usually gave precedence to their relationships with their boyfriends. He concluded that the prevailing socialisation disfavouring females continues to be sustained in schools and higher education institutions.

3. Affirmative action

Affirmative action is a right for women enshrined in the Ethiopian Constitution. Article 35 clearly states that women have equal rights to men in all spheres, including education, employment, and access to resources. It further declares that women should benefit from affirmative action in order to compensate for past deprivations. The provision of affirmative action in favour of women, disabled persons and others from disadvantaged backgrounds is highlighted in the Higher Education Proclamation (Article 6.3).

Accordingly, female students are allowed to enter higher education institutions with a GPA 0.2 lower than that required of male students. As a result, the number of women admitted to universities has increased. However, this has not resulted in significant changes, since the attrition rate of this group is higher than average.

An analysis of longitudinal data on 289 students admitted at Addis Ababa University in 1994 revealed that the survival rate of female students was in general low, and the survival rate for those admitted on the quota system was lower still. The report further indicated that the freshman year survival rate of female students admitted through the quota was approximately 50 per cent, while that of those regularly admitted was about 64 per cent; while the graduation rates after four years were about 40 per cent and 50 per cent respectively.

A number of factors contribute to this high failure rate of affirmative action beneficiaries. One is the lack of academic and social support for students in the universities. The institutions should therefore devise strategies to make up for the academic deficiencies of these students, as well as providing them with counselling services to boost their confidence.

In another study conducted by Tesfaye (2008), the female students who joined the university through affirmative action stated that they might not succeed seeing as they are competing with those who had met the regular admission criteria. They expressed the anxiety they felt when sitting exams, all of which seriously affected their psychological well-being. Affirmative action is controversial and generates resentment; some people feel that it compromises merit and academic excellence. Beneficiaries of affirmative action have been treated in a demeaning way and given nicknames, which intensifies their sense of alienation.
METHODOLOGY

Due to the Ethiopian Government’s policy of higher education expansion, the number of universities has increased dramatically, from 11 in recent years to 21 currently (MOE, 2008). For this study, the authors selected four universities, taking into consideration when they were established, academic excellence, and physical and social environment. Accordingly, the oldest institution (Addis Ababa University), two universities recently upgraded from colleges (Hawassa University and Gondar University), and one recently opened (DebreBerhan University) were covered in the study.

The researchers gathered both primary and secondary data. One of the sources of primary data was a self-administered questionnaire, which was distributed among selected female students in the four universities. The items covered issues such as demographic characteristics of respondents, their educational background, their current areas of study, their family background (education and income of parents), the problems they face in their respective universities, and their coping mechanisms. In order to ensure the reliability of the data collection instrument, the questionnaire was pilot tested and appropriate revisions were made before the data collection.

In addition to the questionnaire, in-depth interviews were used to collect detailed information from female students. Data from interviews were used to elaborate on the data from the questionnaire. In-depth interviews were used to collect detailed information from female students. Data from interviews with students, their coping mechanisms, and institutional support provided to them were emphasised.

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For the in-depth interviews, a snowball sampling technique was used to identify the female students. Gender offices, female students’ associations or girls’ clubs (where available) were contacted to identify a total of 10 (four from Addis Ababa University and two from the other three universities). An attempt was made to include female students from different faculties with varying socio-economic backgrounds and educational performances.

Descriptive statistics were employed to summarise the data and highlight the general characteristics of the target population. To facilitate the quantitative data analysis, appropriate statistical software (SPSS) was used. Data from the interviews were audio taped, transcribed and analysed thematically.

FINDINGS AND DISCUSSION

This section presents the context in which the participants in the study live, relevant background information, the types of problems they encounter at university, and their coping strategies.

1. The context

Male students predominantly occupy university campuses in Ethiopia. Table 3.2 shows the pattern of admission and graduation of students in higher education institutions during the years 2003/04 through 2007/08.

The total admission of regular undergraduate students in government higher education institutions increased from 25,657 to 56,566, i.e. an average increase of 22.23 per cent, from 2003/04 to 2007/08. Female students constituted only 28.4 per cent of the total admission compared to 71.6 per cent for males. A slight improvement was observed in the number of female graduates as the percentage increased from 12.67 per cent to 17.65 per cent over the five year span. However, women still made up only 15.64 per cent of the total number of graduates over the same years.

Similarly, the number of female instructors is very few. The teaching staff is almost all male. For example, at Addis Ababa University, female lecturers make up only about 10 per cent of the teaching staff (MOE, 2009).

Some campus areas by default are seen as the domain of male students. For instance, female students go to the cafeteria late when the male students have finished eating. There are also some places that are not accessible to female students. Women at Addis Ababa University recounted how they tried to go to the students’ lounge, but the male students started shouting at them and they never went back. Other places they did not frequent included the pool house and the volleyball and basketball fields, since these are considered “male territories”.

Most of the universities do not have adequate facilities. There is a shortage of space in the libraries, and women mentioned that the seats are usually occupied by men. Some of the libraries do not have adequate reading materials. In addition, in some of the universities there is lack of study space and no computer laboratories. There is also a shortage of toilet facilities, and the level of sanitation in most of the universities is not commendable. Because of the marginal position they hold, it is female students who suffer the most.

The majority of the interviewees indicated that it is usually male students who actively participate in class by asking questions and responding to questions raised by instructors, while there is low participation by women. It is in such a male-dominated environment that female students attempt to succeed in the four universities covered in the study.

Table 3.2. Patterns of admission to and graduation from higher education institutions over 5 years

<table>
<thead>
<tr>
<th>No.</th>
<th>Year</th>
<th>Admission</th>
<th>Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>1</td>
<td>2003/04</td>
<td>18,906</td>
<td>6,751</td>
</tr>
<tr>
<td>2</td>
<td>2004/05</td>
<td>23,429</td>
<td>10,135</td>
</tr>
<tr>
<td>3</td>
<td>2005/06</td>
<td>28,668</td>
<td>9,665</td>
</tr>
<tr>
<td>4</td>
<td>2006/07</td>
<td>31,042</td>
<td>12,128</td>
</tr>
<tr>
<td>5</td>
<td>2007/08</td>
<td>40,332</td>
<td>16,234</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>28.40</td>
<td>71.60</td>
</tr>
</tbody>
</table>

2. Background information on study participants

The survey covered a total of 1,158 female students from Addis Ababa University, Gondar University, Hawassa University, and DebreBerhan University as indicated in Table 3.3.

<table>
<thead>
<tr>
<th>University</th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addis Ababa University</td>
<td>497</td>
<td>44.1</td>
</tr>
<tr>
<td>Gondar University</td>
<td>213</td>
<td>18.9</td>
</tr>
<tr>
<td>Hawassa University</td>
<td>210</td>
<td>18.6</td>
</tr>
<tr>
<td>DebreBerhan University</td>
<td>208</td>
<td>18.4</td>
</tr>
<tr>
<td>Total</td>
<td>1,128</td>
<td>100</td>
</tr>
</tbody>
</table>

The year of study of the respondents ranged from second year to fifth year, although the majority (55.2 per cent) were second year students, followed by third year students (30.4 per cent). More than half (53 per cent) of the respondents had benefited from affirmative action in their admission.

Most of the respondents were between 17 and 20 years of age, followed by 21-24 year olds. The average age of the respondents was 20.2 years. The minimum and maximum ages were 17 and 42, respectively. Detailed information on age is presented in Table 3.4 below.

<table>
<thead>
<tr>
<th>Age</th>
<th>Freq.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-20</td>
<td>759</td>
<td>68</td>
</tr>
<tr>
<td>21-24</td>
<td>347</td>
<td>31.1</td>
</tr>
<tr>
<td>25 and above</td>
<td>10</td>
<td>0.9</td>
</tr>
<tr>
<td>Total</td>
<td>1,116</td>
<td>100</td>
</tr>
</tbody>
</table>

The majority of the respondents (87 per cent) were single, and about 10 per cent were married. About 70 per cent of the respondents were Orthodox Christians, followed by Protestants (18 per cent).

Close to three quarters of the respondents (74.3 per cent) were born in urban areas, and 49 per cent had attended government primary schools, while 35 per cent came from private schools. Similarly, the majority of the respondents (64 per cent) were from government high schools, followed by 29 per cent from private high schools. The survey also showed that more than half of the respondents (52 per cent) came from secondary schools that were located outside of the major cities. The fact that female students came from schools located outside major cities and from government schools as opposed to private schools has implications for their educational background and performance. Schools outside major cities are not usually staffed with qualified teachers, and the necessary facilities are in short supply.

Private schools have better teachers and more facilities, and as a result, students from schools in big cities and private schools are well represented in universities. For example, in a study conducted by Mulugega (1998), among the 118 schools from which the female students came to the five higher educational institutions covered in that study, 13 of them were private or Catholic schools, almost all located in the capital city. About one third (34.9 per cent) of the women in the universities came from those 13 schools.

Through the present study it was discovered that close to a quarter of the respondents (22.4 per cent) had mothers who were illiterate, while only 11.5 per cent centre ported having illiterate fathers. The proportion of respondents whose fathers’ educational level was tertiary and above was 46.24 per cent, whereas this figure was 33.39 per cent for respondents’ mothers, indicating that fathers were more educated than mothers.

About half of the respondents (51.6 per cent) indicated that their mothers were housewives, while 20.8 per cent were civil servants and 6.3 per cent petty traders. On the other hand, about a third of the respondents (30 per cent) reported that their fathers were civil servants, followed by farmers (20.6 per cent), and employees in the private/NGO sector (16 per cent). The education and occupation of parents have a bearing on their daughters’ education; the more educated and higher the earning capacity of parents, particularly mothers, the higher the chance of girls succeeding in their education.

3. Challenges

The study identified a number of challenges faced by women in institutions of higher learning.

3.1. Education-related challenges

3.1.1. Problems related to the classroom

A significant majority of the respondents (78.6 per cent) reported that they faced difficulties in class due to their inability to follow lectures: 22.1 per cent cited language and lecturing speed, while 18.8 per cent blamed distraction due to personal problems. Inability to take proper notes, anxiety about their weak academic background, and shyness were the next problems highlighted (about 7.5 per cent for each problem). During the interviews the weak educational background of most of the women was cited as a reason why they fail to complete their studies. A female student from Addis Ababa University reported that there were 12 women in her class in the first year, but in fourth year only four remained. An awareness of having a weak academic background creates anxiety among female students, especially those admitted on the affirmative action programme.

Difficulties related to adjusting to a new type of education and teaching-learning system also exacerbate the problems. The ready-made handouts and specific textbooks (usually one per subject) that students were used to using in high school are not features of higher education institutions, which require students to take notes and read multiple books for a single course. There is also the new social environment that consists of students from diverse backgrounds, and large lecture halls in which female students may feel overwhelmed due to the strict socialisation of girls, which exacerbate shyness, reservation and limited social activity.

Although distraction due to personal problems was highly rated by respondents from both rural and urban areas, variations were observed in the type of problems depending upon the place of birth of the respondents. For instance, language was reported as a problem by 20.1 per cent of respondents from rural areas, whereas only 8.4 per cent of those from urban areas recognised it as a problem. Other problems for which similar variations were observed among students from rural areas were shyness and intimidation due to weak academic background. These problems are understandable considering the socio-cultural context in which girls are raised. The strict socialisation process that dictates that females are supposed to be reserved and shy is more predominant in rural areas compared to towns, where families are more educated and exposed to modern ways of life. In addition, the poor facilities in rural schools put students from those areas at a disadvantage, especially in English.

3.1.2. Problems related to assignments and study

About 85.2 per cent of the respondents reported that they encountered problems related to assignments and study, such as lack of study skills (19.4 per cent); lack of study space (1.74 per cent); and lack of reading materials (14.3 per cent). An examination of the responses from the different universities revealed that these are among the top three problems in all four universities.

These problems also surfaced in the interviews held with female students. Several explained that they took advice about their studies from different people who suggest different techniques, which may confuse them. Some also indicated their inability to use their time efficiently, which leads to stress on approach to exams. Lack of study space is another problem identified in the interviews. Some women attempted to study in the dormitories, which do not provide a conducive environment for studying when others could be doing other activities.

As would be expected, a greater number of respondents from rural (89.7 per cent) than from urban areas (77 per cent) indicated that they faced problems related to study and assignments. This is because many urban students who have families in the city go home to study, and some even rent rooms off campus to do their studies. Under these circumstances, women from rural areas who have less money obviously suffer more. There are other variations in problems related to assignments and study based on the rural/urban divide. These problems include lack of concentration due to financial problems (20.4 per cent for rural and 5.8 per cent for urban) and lack of concentration due to personal problems (18.5 per cent for rural and 10.8 per cent for urban).

3.2. Social problems

3.2.1. General social life

The survey results showed that 83.3 per cent of the respondents run into social problems at university. The most frequently mentioned problem is the loneliness that dictates that females are supposed to be reserved and weak academic background. These problems are understandable considering the socio-cultural context in which girls are raised. The strict socialisation process that dictates that females are supposed to be reserved and shy is more predominant in rural areas compared to towns, where families are more educated and exposed to modern ways of life. In addition, the poor facilities in rural schools put students from those areas at a disadvantage, especially in English.
The rapid increase in enrolment at universities has not been accompanied by an increase in facilities on the campuses. As a result, there is a severe shortage of dormitories and other facilities; a dormitory that was originally meant for four students is currently occupied by eight or more. This cramped environment, and living with individuals from different backgrounds, is a challenge, especially during the first year on campus, and has been identified as one of the social problems encountered by students, especially those whose hometown is far from the university.

More female students from rural areas (78 per cent) encountered social problems compared to those from urban areas (63 per cent). For many rural women, coming to university is their first experience in a university campus, which has been identified as one of the social problems encountered by students, especially those whose hometown is far from the university.

The desire to go out, have fun and look good, created to a problem has two dimensions. The first is related to the backgrounds, socio-economic status and religion. The second is their relationship with boyfriends. Interviewees explained that when male students have finished the studying for the day, they call their girlfriends to go out. The girls usually agree, even if they have not completed their assignments. It was reiterated that girls sacrifice a lot to maintain their relationships, which has a negative effect on their studies.

### 3.2.2. Problems related to relationships with instructors

Two thirds of the respondents (63.2 per cent) pointed out that they encountered problems in communicating with their instructors. However, this varies according to where they come from. About 72 per cent of respondents from rural areas (43.2 per cent) feared approaching their instructors for help compared to students from urban areas (27.4 per cent). Generally, the major problem observed is fear by the respondents to approach the instructors (27.6 per cent), followed by the fear by women that others might suspect them of having an affair with the instructor (13.1 per cent), and the feeling that instructors are not approachable (13.1 per cent).

Various reasons contribute to the problems that female students encounter in relation to their instructors. One is the small number of women instructors found in the universities. The other, as indicated above, could be the perception that female students offer sexual favours in exchange for assistance in their studies, all of which boils down to the perception that girls are primarily seen as potential sexual partners rather than competent students who can excel in higher education.

### 3.3. Harassment and violence

Harassment came out strongly in the qualitative data. It is part of everyday life for women in all the campuses studied. One female student from Addis Ababa University explained that when a girl refuses a sexual relationship, the boy tells her “Jealousy”, who will then pursue her to harass, insult and call her names. Harassment affects female students’ social lives as well their academic performance, since it occurs in all places and at all times. Girls can be harassed for the way they are dressed: whether under or overdressed. They are insulted, teased and touched. However, in most cases harassment is not treated as a problem since it is simply part of life and even considered as a way for men to initiate a relationship.

Data from the survey indicated instances of violence on campuses and outside the university premises. Across the universities, the percentage of respondents who reported facing some kind of violence outside the university campus ranged from 73.6 per cent (for Addis Ababa University) to 92 per cent (for Gondar University). Robbery was another type of violence experienced by students from Gondar University (44.1 per cent) and Hawassa University (40.6 per cent). The highest proportion of respondents who mentioned rape was at Hawassa University (30.4 per cent). Aside from the physical and psychological harm it poses, this situation prevents female students from using libraries and other facilities in the universities, leading to poor academic performance. For example, more than a third of the respondents (38.9 per cent) indicated that they had problems studying late in the library or classrooms. The foremost problem in this regard was reported to be violence from male students (47 per cent).

### 3.4. Financial problems

The data shows that about 40 per cent of the total respondents faced financial problems. The qualitative data also confirmed the existence of financial problems in all the universities studied. For example, an interviewee from Addis Ababa University stated that some girls do not have enough money even to make copies of handouts. Another recounted that there were female students who arrived at the university without shoes, and that the Gender Club had been mobilising resources to provide them with basic necessities including sanitary items. The effects of financial problems can be worse for women than for men because of their various requirements, including sanitary materials, and the fact that some of their coping strategies may be undesirable.

One major coping mechanism used by female students in dealing with the shortage of reference materials is to photostat them from those who have them. This was reported by more than a third of the respondents (35.9 per cent). The next two commonly used strategies were borrowing from those who have access to them (28.3 per cent) and buying the book (12.8 per cent). Only 6.4 per cent indicated that they do nothing in response to shortage of reference materials.

Nearly all respondents (95.5 per cent) used different mechanisms to deal with the problem of shortage of study places. The three most commonly used approaches were sleeping early and getting up late at night to study (29.9 per cent); studying in the dormitory (18.6 per cent); and going home (18.2 per cent). The students who go home are those who have families in the same locality as the university.

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Although going to an empty classroom is an alternative solution for lack of study space, many female students feel dissuaded from doing so for fear of harassment and violence. This was a recurring issue in the interviews. A female student from Addis Ababa University told how a male classmate who had agreed to assist her with an assignment in an empty classroom in the evening instead started to harass her.

In response to harassment and violence, the three major coping mechanisms mentioned were reporting to the Women’s Affairs Office (26.0 per cent for violence and 27.1 per cent for harassment); discussing with their friends (20.6 per cent for violence and 21.2 per cent for harassment); and discussing with their families (18.9 per cent for violence and 18.8 per cent for harassment). Fifty percent of female students that participate in gender-related activities compared to 34 per cent of those who do not indicated that they report incidents of harassment and violence to the Gender Office on campus.

Interviewees identified various other coping strategies that they use in order to protect themselves from harassment and violence. Some of them simply opt to ignore the harassment, or they attempt not to attract attention by “keeping oneself invisible”. Another strategy many use is moving in groups with other girls, particularly when they want to work late in the library. One final strategy identified from the interviews is that some women get boyfriends to protect them from harassment and violence. Having a boyfriend, it was said, is like having a bodyguard.

As regards financial problems, the three major coping mechanisms that respondents use are asking for help from their families (68.4 per cent); asking for money from friends (12.2 per cent); and asking for money from relatives (6.4 per cent). The interviews further showed that a large number of students borrow money from friends, or from students who worship in the same church as they do.

The qualitative data show mixed perceptions regarding the issue of offering sex for money as a coping strategy to resolve financial problems. For example, a student from Addis Ababa University indicated that, “There are girls who go out with many guys to get extra money since parents are not able to fulfil all their needs”, while other interviewees claimed that even students with adequate funds still go out with sugar daddies because “They assume that joining a university means having the freedom to do everything.”

5. Agency

Relationships usually involve power. The relationship that female students have with higher education institutions can be seen as a power relationship. This is reflected in the representation of women at universities as students, professors and key administrators. It is also expressed in the attention female students receive in addressing their unique needs. As has been mentioned repeatedly, women appear invisible; their participation in class is minimal, and their active participation in academic, extra-curricular, and non-academic activities is insignificant due to their small number, harassment, violence and lack of a responsive system at the institutions. Sometimes, as one of the interviewees explained, male classmates show resistance when females outperform them. However, this does not imply that female students do not have agency. As explained by Mulugeta, despite the oppressive conditions under which individuals live, they find ways to express themselves and attempt to change and manipulate their social environment.

The study revealed more than 96 per cent of the female students do various things to improve their situation by, for example, asking classmates for help, finding and reading books on the subject, and also praying. They actively involve themselves in solving their problems. In response to the shortage of reading materials, those who could borrow them, others made photocopies, and the rest borrowed from friends. The problem of lack of study space was countered by creating a shift system where some study while others sleep. They went to empty classrooms in the evenings when the rooms were free. Others who had families nearby went home to study.

The girls kept changing their coping strategies; the whole process was a continuous adaptation of different techniques. For example, although going to an empty classroom is a good solution to address the lack of study space, it does have risks of encountering harassment and violence. As indicated earlier, 47 per cent of the respondents mentioned that the problem with staying late in the library or an empty classroom was fear of male students, so they started moving in groups and waiting for each other.

Incidences of violence and harassment were reported to the Gender Office or discussed among friends or family members. They had two types of coping strategies; physical – i.e. acting to address the problem and emotional behaviour that can relieve anxiety and stress, such as talking about it and praying (Mulugeta, 2008). Many expressed their determination to face challenges in the short term because they were focused on the long-term goal of succeeding in their studies. In particular, those from the rural areas thought about the sacrifices their families had made to enable them attend university and knew that they were the hope of their families. Knowing what they wanted, having visions and goals, and working hard to achieve them while avoiding side distractions were the principles upheld by the students.

Recommendations and Conclusion

Recommendations

The findings show that the gender office in the various universities takes responsibility for helping female students in different ways such as giving orientation when they arrive at the university, coordinating the provision of services like tutorial services, and mobilising resources for female students who are financially needy. However, only a few students were aware of the existence of the gender office and the services it renders. Therefore, efforts should be made to strengthen the gender office, to expand its services, and to create awareness about its existence. Harassment and violence, problems that came out in the interviews, are recurring and important issues that need to be undertaken in order to ensure the academic success of these students.

The study revealed that although more than half of the female students were admitted through affirmative action, they do not get appropriate support, such as training on study skills, tutorial services, and counselling. Consequently, the affirmative action policy needs to be accompanied by an implementation strategy that will clearly outline the various activities that need to be undertaken in order to ensure the academic success of these students.

Many of the interviewees have clearly described what it takes to succeed in higher education. They said one must have goals, persevere, be patient, delay pleasure and have self-confidence. All this could be achieved if female students are exposed to experiences that help them develop these perspectives and traits. Therefore, it is necessary to include programmes such as training workshops, experience sharing with successful female students, and bringing in women role models as part of the orientation programme provided in the first year. These activities could be coordinated by the gender offices.

The female students from all the universities complained about the shortage of facilities such as toilets, scarcity of water, lack of space in the libraries, and recreational facilities. These problems vary from university to university; in the newly established universities they are worse. Female students are particularly affected because of their unique needs and the marginal position they hold compared to their male counterparts. Therefore, higher educational institutions need to address these problems by providing extra space and services for female students.
Conclusion

Slowly, the rate of female enrolment in Ethiopian higher education institutions is increasing. The policy of affirmative action has helped a great deal. However, a closer look at the situation reveals that all the girls who enter higher education institutes do not complete their studies; quite a significant number of them fail and get dismissed because of various problems.

The environment in higher education institutions is not friendly to female students. For one thing, they are very much outnumbered. Facilities and services that address the unique needs of female students are lacking. Gender stereotypes that push female students to behave in a traditional manner are prevalent. Female students avoid going to certain places because they are considered to belong to male students, and similarly they avoid participating in activities that are seen to be primarily for men. Male students are the major actors both inside and outside of the class, but in some instances when female students outperform them, they get upset.

Some female students encounter various academic-related problems such as the inability to take notes, study, and perform well on exams. All these are related to their weak academic background and lack of study skills and challenges in adjusting to the unfamiliar education system and to the physical and social environment. Academic problems are exacerbated by the shortage of reading materials and study space. The dormitories are overcrowded and not provide a convenient place for study. The alternative of staying late in the library or in an empty classroom risks exposing the female students to harassment and violence.

Many of the female students feel lonely; they have difficulty living harmoniously with classmates or dorm mates. They find it difficult to balance their social and academic activities. Some find their instructors unapproachable and shy away from seeking the necessary support. The worst affected by these problems are those who come from rural areas and who attended government schools.

The social environment in the universities is not gender responsive. Harassment and violence are widespread, which make girls feel constrained from benefiting from the limited services the universities do provide, such as libraries, empty classrooms for study, student lounges, and sport and recreational facilities. Girls are expected to give in to the demands of male students, and those who refuse sexual relationships are penalised. All these problems are more complicated given the financial problems that a significant percentage of the female student population faces.

However, women are not simply victims and passive observers. They use their agency to understand the problems and act to change and manipulate the situation in order to enhance their chances of succeeding. They work hard; they somehow acquire the materials they need; they take shifts for sleeping and arrange times for their study; they go to empty classrooms and libraries and move in groups to avoid harassment and violence. They sometimes overlook harassment to go about their own business. When they think it is effective, they report to their respective gender office. The students covered in the study learned about their environment, looked at their needs, and acted in the way they thought was best. Since agency is related to past experiences, some adopted negative coping strategies, e.g. engaging in sex for money or linking up with sugar daddies to alleviate financial problems. Yet still they have agency, agency that any intervention needs to take into account in order to redirect attention and put in place strategies that are nurturing and enhancing.

REFERENCES

Gender disparities in higher education in Senegal: Challenges and the way forward

ABSTRACT

This study analyses the representation of female students in higher education in Senegal and examines their career prospects. It aims to study the distribution of girls and boys in different subjects and at various levels of education in relation to the labour market, in order to identify the current challenges and the constraints that will need to be tackled in the future.

This is a descriptive research exercise that is mainly based on collecting and analysing statistical data on girls and boys in higher education and on identifying any gender-based discrepancies. The methodology is based on documentary research and a field survey. The field survey targeted both state and public higher education institutes, as well as national vocational training colleges, in order to examine the distribution of baccalaureate students based on gender and training opportunities.

The results show that although they provide the best education, universities are not able to take in all applicants due to inadequate facilities, and they offer very few literature courses, in which the majority of girls tend to enrol. In their policies, state universities do not cater for the specific needs of female students, neither in terms of living conditions on university campuses, nor of their rules and regulations. Thus, the latter tend to turn to the private sector, which is more flexible and provides more choices in terms of career opportunities. However, access to such institutions is limited by the often-high tuition fees.

Besides, the high concentration of female students in the tertiary sector and the saturation of training institutions tend to lessen their chances of entering the job market. In summary, this study raises new issues that require a specific focus.

Introduction

Access to universal education at all levels remains the first challenge for countries in the South to overcome if they are to achieve their development objectives. It is following this realisation that Senegal committed to improving its school system, which led to a reduced gap between boys and girls in the primary and secondary levels.

Since Beijing, significant progress has been made to achieve the objective of gender parity at primary level. In 2004, the parity index shifted in favour of girls at 1.01, and in 2007 it went up to 1.07 following a positive discrimination policy in favour of primary school education for girls. In secondary education, the male-female parity index increased in all regions, from 0.73 in 2003 to 0.85 in 2007.

However, very few studies on this issue have been conducted in relation to higher education. This is why the Laboratoire Genre et Recherche Scientifique (Gender and Scientific Research Laboratory) of Cheikh Anta Diop University’s Institut Fondamental d’Afrique Noire (Fundamental Institute of Black Africa)1 wanted to research the future of girls after secondary school. Girls accounted for 42 per cent of baccalaureate students in 2009, but according to trends, that figure will continue to increase. Moreover, due to the lack of adequate facilities in state higher education institutions, many baccalaureate holders, girls and boys alike, are excluded from university; this has led to a proliferation of private colleges and institutes, but the diplomas some of them deliver do not guarantee a career to new graduates.

The gradual liberalisation of higher education started at the end of the nineties, as the established structures could no longer welcome new students and the pressure exerted by international institutions such as the World Bank was too great. This institution felt that higher education could not meet the demand, and that it was too expensive and produced poor results.

Thus, the state did not initially focus on issues of quality in the private sector, nor on any consistency between the courses offered with the labour market needs, and much less on issues of gender, which explains why so many private higher education institutions were created, but with no follow up policy.

This research aims to assess how girls and boys are represented in various levels and subject areas of both state and private higher education, and if these programmes provide girls and boys with equal opportunities to enter the labour market.

The report is structured as follows:

• The first section presents the scope of the study. First, it examines the situation in higher education in Senegal, taking into account issues related to gender disparities, particularly in the public and private sectors. Secondly, it describes the research assumptions, the objectives, and the methodological approach.

• The second section presents and discusses the results of the survey, before drawing conclusions and making recommendations.

Gender and higher education in Senegal

This section focuses on the state of higher education as a whole in Senegal, as well as on the specific development of the private sector, before looking at the link between education and employment, all the while taking into account the specific situation of girls.

• State of higher education in Senegal

Higher education is currently going through many difficulties, due in the most part to a demand that is vastly superior to the supply. Indeed, the demand for training increases every year. The National Statistics Agency (NSA) estimated that the student population had reached 91,359 in 2007, including 59,110 male and 32,249 female2.

Women make up more than half of the human capital in Senegal. Their limited presence in science and technology represents a missed opportunity...
Analysing the supply of higher education highlights a strong concentration in Dakar, where most of the facilities are located. This is why the state created a second university in 1980 in the region of St. Louis. It also attempted to spread out higher education by creating regional university centres in 2007 in three other areas of the country, namely Thies, Diourbel and Ziguinchor. However, these decisions did not effectively resolve the issue of the absorption of bacalauréate holders in university institutions, nor that of performance and relevance.

There is a growing influx of students every year, while the main university in Dakar has surpassed its full capacity. Thus, the student population went from 15,000 in the 1960s to 80,000 30 years later (Niasse, 2006, p. 17). This significant increase in the number of students, which was not matched by an improvement in teaching and learning conditions, explains the many crises experienced in the higher education sector. The first warning signs of this crisis date back to the 1980s and 1990s and are linked to social and pedagogical demands (lack of scholarships, accommodation problems, gaps in the student-teacher ratio, etc.). The situation has not improved much since then and there have been strike actions every academic year, in spite of efforts made by the government.

To tackle these recurrent problems, Senegal developed a sector-wide higher education and university research policy in 1996 that aimed to reduce the student overload and increase the number of courses offered in teaching and learning conditions, explains the many crises experienced in the higher education sector. The first warning signs of this crisis date back to the 1980s and 1990s and are linked to social and pedagogical demands (lack of scholarships, accommodation problems, gaps in the student-teacher ratio, etc.). The situation has not improved much since then and there have been strike actions every academic year, in spite of efforts made by the government.

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Towards the end of the 1990s, the low offering fostered an increase in the number of private higher education institutes. In 1995, the Senegalese Ministry of Education introduced an outline agreement that led to the emergence of private structures. This agreement was signed on 2 May 1995 between the Government of Senegal and the private sector. It outlines the purpose and status of private higher education institutions.

Since then, there has been a boom in the private sector, with the number of students shooting from 4 in 1994 to 70 in 2007 (Niasse, 2008), while this research found 86.

According to Niasse (2008), there were an estimated 500 students in private institutions in 1994, while statistics from the Réseau Ouest et Centre Africain de Recherche en Education (ROCARE) indicated that the figure for 1999/2000 was 5,000. According to the Agence Nationale de Statistique et de la Démographie (ANSD) report (ANSD, 2007), there were 13,268 students in the private sector in 2007. There has been a notable growth of the private sector, but what of the quality? What is the situation in terms of the link between training possibilities and the labour market? Do the courses offered enable girls and boys alike to enter the professional market?

Private schools generally cater well for the service sector (accounting, management, secretarial, administration, tourism, hotel management, etc.), but less for technical professions (refrigeration, electronics, electricity, construction, industry, etc.). However, the private sector has been criticised for its treatment of teaching staff. Besides, the diplomas delivered are not always officially recognised and do not guarantee students a job afterwards. Thus, many students complete their studies, but still fail to find work.

According to a World Bank report, the private sector has not yet achieved convincing results, especially in the scientific and technical areas. The report states that success rates for students seeking a State-recognised diploma in technical education are estimated at 50 per cent for CAP (certificate of professional aptitude), 30 per cent for BEP (technical qualification in a specific field, follows the CAP) and 20 per cent for BTS (vocational qualification). This sector therefore only produces 3,000 new qualification holders per year in all areas and at all levels, whereas the labour market needs in 2004 were ten times higher.

- Inadequacy between the education system and the labour market

The relevance of higher education courses in Senegal is still being questioned. According to the World Bank, the majority of students are not drawn to scientific courses, which barely attracted a little over one third of boys and girls across the country in 2005 (World Bank, 2007, p. 52).

There is a lack of alignment between the training provided and labour market needs, which explains why those that hold a qualification find it difficult to secure employment. Training is structured in such a way as to accommodate the needs of a modern sector, whereas the chances of finding employment in this sector are limited. In Africa, in fact, “less than three out of four graduates manage to find employment in the modern sector” (UNESCO-BREDIA, 2008, p. 3).

According to the World Bank (2007), net job creation in the formal sector was estimated at around 1.1 per cent per year between 1995 and 2004 (boosted mainly by the development of education and health), whereas employment in the informal sector was booming. In the modern sector, employment growth was relatively static and did not exceed an average of 0.06 per cent between 1995 and 2004, a rate ten times lower than in the informal sector (World Bank, 2007, p. 31). Besides, only a handful of small and medium enterprises (SMEs) generate most of the jobs. However, these structures account for less than 20 per cent of the total formal employment market.

One can draw the conclusion that it is in the informal sector that most jobs are created, even though the education system as a whole does not seem to take the latter into account.

- Low percentage of girls in higher education

Many publications have shown a link between girls’ education and economic productivity, especially when the girls reach higher education. In Senegal, the state and education sector organisations took many initiatives to boost the education of girls and reach the goal of universal education. Thus, thanks to the Girls’ Enrolment Programme, the number of female students increases every year.

The willingness of the government to provide an education to all and at all levels was expressed through the policy formulated in the Decennial Education and Training Programme and in the Framework Act. However, most initiatives have focused on the primary and secondary cycles. As for the reduction of gender disparities in higher education, it remains a major challenge in so far as, according to ANSD, girls only account for 33.5 per cent of higher education students. Comparatively to boys, there is a larger number of girls in private institutions.

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Issues of gender in higher education have generally been examined from the perspective of accessibility of the system and of scientific subjects etc. to girls. This study focuses rather on gender discrepancies between the number of girls and boys that have access to higher education in each subject area, while referring to the sociocultural representations of male and female roles in the Senegalese context.

The privatisation of education is another issue tackled in this study. As markets open up, there is a risk that education will become "commercialised", and one should be mindful that commercial concerns do not overtake the priorities of the education system. As the government is unable to regulate higher education, the most disadvantaged groups, as well as girls, may be excluded or become victims of poorly managed privatisation.

METHODOLOGY

The methodology is mainly based on the collection of statistical data from the Baccalauréate Office, ANSD, and higher education institutions. Having started in 2009, the study uses the results of the 2007 baccalauréate and the 2008 data from institutions as baseline data. The population studied consists of students in five state universities, 85 private institutions, and 19 national colleges (see Table 3.5).

Table 3.5. Institutions covered by the study

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Identified</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public universities</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Private institutions</td>
<td>85</td>
<td>75</td>
</tr>
<tr>
<td>National colleges</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>109</td>
<td>93</td>
</tr>
</tbody>
</table>

An initial list of 109 private institutions was created from the databases of the Higher Education and Vocational Training Authority, as well as from data collected on the Internet. In this list, three schools no longer exist and 21 can no longer be traced due to inaccurate addresses or because they have relocated without leaving new contact details.

Out of the remaining 85 institutions, four refused to answer the questionnaire and six did not return it on time. In the final analysis, the study covered 79 institutions representing 98.3 per cent of private institutions identified and 100 per cent of state universities. Out of the 74 schools surveyed, 70 had an agreement, which represents 94 per cent. As for national colleges, out of the 19 identified, only 13 (or 68.42 per cent) were surveyed.

- **Documentary research**
  It helped to understand the state of higher education in Senegal and the extent to which gender is taken into account. The study explores various educational policies undertaken by Senegal in light of major documents, namely: the Constitution, the successive declarations of heads of government from 1960 to 2008, the poverty reduction strategic paper, the education policy brief, and the documents of the Decennial Education and Training Programme.

The analysis shows that at the beginning of the 1960s, the main priorities were the macroeconomic trends of the education sector. In the 1980s, policies focused on adapting the education system to the national context. It is only from the 1990s, following the Beijing Conference, that the issue of girls’ education became central to education policies. From the year 2000, the government set a number of priorities, among which was to achieve parity between boys and girls in order to fulfil the MDGs. The 2005 sector-wide policy brief strengthens this perspective.

Analysing official statistics, gender disparities in baccalauréate results in all subject areas, as well as the distribution of students in the various courses of public institutions, were explored.

- ANSD data provided indications on the evolution of the situation of higher education institutions.
- The higher education and vocational training directions provided a directory of state-approved private higher education institutions in Senegal.
- The Baccalauréate Office provided the baccalauréate results.
- The administrative services of the vice-chancellors’ offices in the five universities of Senegal provided data on the distribution of students according to gender and subject area.

- **The field survey**
  The survey was conducted in the region of Dakar, where most of the higher education institutions are located, and in the regions of Thies, Saint-Louis, Ziguinchor and Diourbel. A questionnaire was submitted to the directors of private institutions and national training colleges, covering general information on the institution (status, date of creation, agreement, fees), the training courses offered and the distribution of students with a qualification by cycle and by gender.

Two strategies were adopted to validate the field data: the requirement of a school seal confirming that the data was provided by the management, and a phone call to the Director. Interviews were conducted with a few private schools in order to clarify issues raised when compiling the results of the questionnaire. The data was processed using Statistical Package for the Social Science (SPSS), version 15.0.

- **Difficulties and constraints of the study**
  The main difficulties encountered in this study were of an administrative nature. There was much to do before private institutions accepted to fill in the questionnaire appropriately. Many of them did not have gender-disaggregated statistics, which had to be computed before reporting on the data.

It was sometimes difficult to contact institutions when they had changed address without informing the relevant authority. Others did not provide a physical address, or the telephone number given was no longer in use. Some institutions refused to answer the questionnaire or submitted it late. These were not included in the study.

- **Girls in higher education**
  The analysis of results focuses on the path followed by female baccalauréate holders and their entry into various private and public higher education institutions.
  The number of girls that succeed at baccalauréate level has increased slowly but consistently. From 38.3 per cent in 2001, girls represented 42 per cent of all baccalauréate holders in 2009 (see Figure 3.2).

An analysis of the number of students in higher education reveals that there are fewer girls at university. There were 47,136 baccalauréate holders in Senegal in 2007, of which 19,092 were girls. These accounted for 40.5 per cent of baccalauréate holders, but the figure dropped to 34.2 per cent in the initial cycles in 2008, irrespective of the system. This is simply due to issues surrounding the enrolment of girls in primary education and dropout rates from secondary school; and as many authors have argued, the under-enrolment and dropout rates of girls are usually caused by economic and sociocultural factors that affect them more than they do boys. When families are poor and find it difficult to put all their children through school, they tend to favour boys because society expects them to take on the role of family head and to take over from their father (Nogaye Gueye, 2008).

In Senegalese society, as in many others, the social responsibilities of women are centred on motherhood, children’s education, and maintaining the household. Besides, girls are a significant labour force that share the responsibilities of raising children, maintaining the household and working in the fields. In view of this, they do not necessarily have the opportunity to complete their secondary education and they find it difficult to put all their children through school, as is the case in many other countries; and as many authors have argued, the under-enrolment and dropout rates of girls are usually caused by economic and sociocultural factors that affect them more than they do boys. When families are poor and find it difficult to put all their children through school, they tend to favour boys because society expects them to take on the role of family head and to take over from their father (Nogaye Gueye, 2008).

**Figure 3.2. Longitudinal analysis of the number of students registered at baccalauréate level, 2001-2009**


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These are the same sociocultural factors that push girls into marriage, and which cause them to choose private institutions and vocational training centres that provide short training courses, so that they can quickly access the labour market (see Table 3.6). However, the private sector courses in which they register do not offer them more employment opportunities later.

Table 3.6. Gender distribution in the first cycle of higher education, 2008

<table>
<thead>
<tr>
<th>1st cycle</th>
<th>Females</th>
<th>Males</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Private</td>
<td>1,842</td>
<td>57.6</td>
<td>1,724</td>
</tr>
<tr>
<td>National colleges</td>
<td>790</td>
<td>32.5</td>
<td>1,843</td>
</tr>
<tr>
<td>Universities</td>
<td>13,777</td>
<td>32.8</td>
<td>2,704</td>
</tr>
<tr>
<td>Total</td>
<td>16,499</td>
<td>34.2</td>
<td>31,517</td>
</tr>
</tbody>
</table>

Source: Survey by Laboratoire Genre et Recherche Scientifique at IFAN-UCAD (2009).

Figure 3.3. Number of students registered at baccalaureate level by subject area and gender, 2007

There are more girls obtaining a baccalaureate in the arts and humanities section, representing 67 per cent of the students enrolled (see Figure 3.3), whereas universities offer fewer course possibilities in those areas. Even though this situation is not specific to girls, they suffer from it more than boys do, as fewer of them go on to the third cycle, whereas the degrees delivered in the first cycle cover only basic knowledge and offer few chances of entering the job market.

In 2007, there were more girls in the management section (G), accounting for 57.2 per cent of baccalaureate holders. Thanks to shorter vocational training, this section provides opportunities for a faster entry into the labour market. Unfortunately, only 7.4 per cent of girls who sat the baccalaureate examination were successful in this section, compared with 48 per cent of boys. In the scientific and technical sections, there were 24.8 per cent of girls in 2008 against 37.9 per cent of boys (see Figure 3.3).

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With the exception of Bambe, less than a third of all university students are girls. In these institutions, the majority of girls study community health, while 38.3 per cent study management (see Table 3.7).

Table 3.7. Distribution of students among the various public universities

<table>
<thead>
<tr>
<th>Establishment</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Cheikh Anta Diop</td>
<td>17,647</td>
<td>31.2</td>
<td>38,973</td>
</tr>
<tr>
<td>Gaston Berger</td>
<td>1,340</td>
<td>27.8</td>
<td>3,472</td>
</tr>
<tr>
<td>Thies</td>
<td>241</td>
<td>23.1</td>
<td>804</td>
</tr>
<tr>
<td>Bambe</td>
<td>549</td>
<td>33.8</td>
<td>1,073</td>
</tr>
<tr>
<td>Ziguinchor</td>
<td>272</td>
<td>22.6</td>
<td>933</td>
</tr>
<tr>
<td>Total</td>
<td>20,049</td>
<td>30.7</td>
<td>45,255</td>
</tr>
</tbody>
</table>

Source: Survey by Laboratoire Genre et Recherche Scientifique at IFAN-UCAD (2009).
2.1. Cheikh Anta Diop University (UCAD)

At Cheikh Anta Diop University, female students are present in all sections of the first cycle, but they are more concentrated in the areas of health, education, and archiving and documentation (see Figure 3.6).

In the third cycle, they all but disappear from scientific sections, where they represent a very small minority, as is the case for polytechnics (15.3 per cent) and science and technology (16.5 per cent). At the Faculty of Sciences and Technologies for Education and Training, they merely represent 13.3 per cent of the student body.

In that same cycle, girls are more numerous in the health sectors and constitute the majority in the Population and Development Department (61.5 per cent), at the College of Technical and Vocational Training (46.7 per cent), and in the medicine and pharmacy departments (33.6 per cent) (see Figure 3.7).
2.2. Gaston Berger University in St. Louis

Founded in 1990, Gaston Berger University in St. Louis is the second largest university in Senegal. Female students account for 27.8 per cent of the student body and are more numerous in the Faculty of Arts and Humanities (32.8 per cent), and the Faculty of Economic Science and Management (29.5 per cent). They remain a minority in science and technology and in applied science and technology (14.8 per cent).

Table 3.8. Distribution of students by gender, course and cycle at UGB, 2008

<table>
<thead>
<tr>
<th>COURSES/DPT</th>
<th>1st cycle</th>
<th>2nd cycle</th>
<th>3rd cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nbr %</td>
<td>Nbr %</td>
<td>Nbr %</td>
</tr>
<tr>
<td>AST DPT (Applied Sciences and Technology)</td>
<td>63 16.1</td>
<td>328 83.9</td>
<td>50 12.5</td>
</tr>
<tr>
<td>Law and Political Science</td>
<td>154 29.7</td>
<td>365 70.3</td>
<td>77 28.9</td>
</tr>
<tr>
<td>Arts and Humanities</td>
<td>446 35.4</td>
<td>815 64.6</td>
<td>101 30.1</td>
</tr>
<tr>
<td>Economic Science and Management</td>
<td>97 34.5</td>
<td>184 65.5</td>
<td>242 27.8</td>
</tr>
<tr>
<td>Total</td>
<td>760 31.0</td>
<td>1,692 69.0</td>
<td>470 25.1</td>
</tr>
</tbody>
</table>

2.3. University of Ziguinchor

Created in 2007, the University of Ziguinchor aims to train senior executives for Senegal and other African countries. It seeks to contribute to scientific research at the national and international levels, as well as to develop African cultural values. In this region, female representation falls below the national average, as at Baccalaureate level they are 27.9 per cent, while the national average is 34.1 per cent (ANSD, 2007). They account for 22 per cent of the student body and are more numerous in sociology (41.6 per cent), tourism (35.0 per cent), and applied foreign languages (34.5 per cent). They are very few in scientific sections, with only 4.9 per cent in mathematics, physics, chemistry and computing. According to the last general population census of 2002, Ziguinchor is the only region of Senegal where there are more men than women (see Table 3.9).

Table 3.9. Gender distribution in the different courses in Ziguinchor, 2008

<table>
<thead>
<tr>
<th>Courses</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agro-forestry</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Business Law</td>
<td>8</td>
<td>18.3</td>
<td>41</td>
</tr>
<tr>
<td>Economics-Management</td>
<td>40</td>
<td>26.1</td>
<td>113</td>
</tr>
<tr>
<td>Geography</td>
<td>31</td>
<td>15.5</td>
<td>169</td>
</tr>
<tr>
<td>Applied Computing</td>
<td>50</td>
<td>21.8</td>
<td>179</td>
</tr>
<tr>
<td>Applied Foreign Languages</td>
<td>10</td>
<td>34.5</td>
<td>19</td>
</tr>
<tr>
<td>Modern Literature</td>
<td>41</td>
<td>27.5</td>
<td>108</td>
</tr>
<tr>
<td>Mathematics-Physics-Chemistry-Computing</td>
<td>7</td>
<td>4.9</td>
<td>136</td>
</tr>
<tr>
<td>Community Health</td>
<td>307</td>
<td>50.8</td>
<td>297</td>
</tr>
<tr>
<td>TOTAL</td>
<td>272</td>
<td>33.8</td>
<td>933</td>
</tr>
</tbody>
</table>

2.4. Bamby Regional University Centre

The Bamby Regional University Centre was founded in 2007 with the aim of increasing diversity in the courses offered and of providing first cycle courses in subjects taught at other universities, where students can then transfer into the second cycle. Thus, the Bamby Regional University Centre (BU-RUC) offers ten professional bachelor courses in various areas. Female students represent 33.8 per cent of the student body, but 55.9 per cent of them are registered in community health, where they represent 50.8 per cent of registered students. Very few of them enrol in scientific and technical courses (see Table 3.10).

Table 3.10. Gender distribution in the different courses in URC Bamby, 2008

<table>
<thead>
<tr>
<th>Courses</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistics and Decisional Computing</td>
<td>6</td>
<td>10.7</td>
<td>50</td>
</tr>
<tr>
<td>Mathematics-Physics-Chemistry-Computing</td>
<td>13</td>
<td>8.8</td>
<td>135</td>
</tr>
<tr>
<td>Economics and Management</td>
<td>124</td>
<td>38.2</td>
<td>201</td>
</tr>
<tr>
<td>Web Application Development and Management</td>
<td>81</td>
<td>27</td>
<td>220</td>
</tr>
<tr>
<td>Multimedia Design</td>
<td>2</td>
<td>12.5</td>
<td>14</td>
</tr>
<tr>
<td>Administration and Maintenance of IT Networks</td>
<td>16</td>
<td>9.3</td>
<td>156</td>
</tr>
<tr>
<td>Community Health</td>
<td>307</td>
<td>50.8</td>
<td>297</td>
</tr>
<tr>
<td>TOTAL</td>
<td>649</td>
<td>33.8</td>
<td>1,073</td>
</tr>
</tbody>
</table>

Overall, the gap is narrower in the second cycle; there are two sections in which the gap is smaller again in the third cycle, namely applied science and technology, and economic science and management (see Table 3.8).
2.5. University of Thies
Founded in 2007, the University of Thies includes several colleges:
- The National Agriculture College
- The Earth Science and Environment College
- The Training and Research Department in Economic and Social Sciences
- The Training and Research Department in Science and Technology
- The Training and Research Department in Health Sciences
- The Agriculture and Rural Training Institute

The University of Thies includes national colleges and training and research departments. Girls account for 23.1 per cent of registered students, regardless of the section, but they are mostly found in economic and social sciences (35.8 per cent). They are still a minority in science and technology, constituting 9.9 per cent of all registered students (see Table 3.11).

Table 3.11. Gender distribution in the different courses in Thies, 2008

<table>
<thead>
<tr>
<th>Course</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Institute of Agricultural and Rural Training (ISFAR) formerly ENCR</td>
<td>15</td>
<td>10.6</td>
<td>141</td>
</tr>
<tr>
<td>Thies Polytechnic (Civil Engineering)</td>
<td>23</td>
<td>21.1</td>
<td>109</td>
</tr>
<tr>
<td>Thies Polytechnic (Electromechanical Engineering)</td>
<td>10</td>
<td>11.8</td>
<td>85</td>
</tr>
<tr>
<td>Agricultural Higher Education College (ENSA)</td>
<td>26</td>
<td>18.3</td>
<td>142</td>
</tr>
<tr>
<td>Science and Technology (SET)</td>
<td>13</td>
<td>9.4</td>
<td>138</td>
</tr>
<tr>
<td>Social and Economic Sciences (SES)</td>
<td>154</td>
<td>35.8</td>
<td>430</td>
</tr>
<tr>
<td>Total</td>
<td>241</td>
<td>23.1</td>
<td>1,045</td>
</tr>
</tbody>
</table>

Source: Survey by Laboratoire Genre et Recherche Scientifique at IFAN-UCAD, 2009. URC Student Services, Thies.

3. Overwhelming presence of girls in the first cycle of private schools
There are more girls in the first cycle of private schools. They are 1,842 against 1,724 boys, or 51 per cent, but this number drops slightly in the second (46.9 per cent) and third cycles (33.3 per cent) (see Figure 3.9).

Figure 3.9. Number of students in the private sector by course, 2008

Private higher education provides more opportunities for girls. It is more flexible in terms of entry criteria to its learning programmes, and offers more short-term courses than universities, which tend to offer general and very long courses. It should also be pointed out that colleges in the private sector offer training courses that enable the acquisition of employable skills.

There are more female students in areas that lead to positions traditionally filled by women, such as director’s assistant (79.7 per cent) or nurse (90 per cent). Nevertheless, their presence is felt across the board in almost all subject areas, as they constitute more than a third of the total number of students, except in civil engineering, where they are only 11.4 per cent, and computing, where they represent 27.5 per cent. On the other hand, men are more numerous in human resource management, transport and civil engineering, and above all in computing, where they are the vast majority, especially in areas such as maintenance and web design, where they represent 72.5 per cent of the students enrolled (see Figure 3.10).

Figure 3.10. Distribution of female students by course in the 1st cycle, 2008

Key
1. Computing-Networks, Web, etc.
2. Director’s Assistant
3. Finance-Banking
4. Business-Trade
5. Accounting and Management
6. Human Resource Management
7. Civil Engineering
8. Transportation
9. Nurse
10. Communication-Journalism
11. Management
12. Marketing
13. Development
14. Security

Source: Survey by Laboratoire Genre et Recherche Scientifique at IFAN-UCAD (2009).
For the most part, private colleges do not offer postgraduate courses. However, they provide more flexibility with evening courses and even weekend courses, which target professionals and attract a greater number of women to the second cycle, even though the trend slows down in the third cycle. Indeed, there are fewer subject areas, and out of 14 identified in the first cycle, only five remain (see Figure 3.11).

Figure 3.11. Distribution of female students by course in the 3rd cycle, 2008

Out of the 13 colleges analysed, some have a majority of male students, such as technical colleges, while others have a majority of female students. There is a larger number of female students in subject areas that have a social component, such as health, social work and tourism, but much fewer in technical subject areas such as statistics, mechanical engineering and fishing. The gap between girls and boys increases steadily further up the cycles, even though very few vocational training colleges provide third cycle courses (see Figure 3.12).

Table 3.12. Distribution of students by gender and course in vocational training colleges, 2008

<table>
<thead>
<tr>
<th>College</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senegal/Japan Vocational and Technical Training Centre (CFPT)</td>
<td>17</td>
<td>104</td>
<td>121</td>
</tr>
<tr>
<td>Centre for Entrepreneurship and Technical Development (CEDT<em>G15</em>)</td>
<td>64</td>
<td>516</td>
<td>580</td>
</tr>
<tr>
<td>National Training Centre for Maritime Fishing and Aquaculture Technicians (CNFT/PMA)</td>
<td>2</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Customs College</td>
<td>3</td>
<td>48</td>
<td>51</td>
</tr>
<tr>
<td>National Training College for Family and Social Economics (ENFEFS)</td>
<td>4</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>National Training College for Hotel Management and Tourism (ENHT)</td>
<td>71</td>
<td>54</td>
<td>125</td>
</tr>
<tr>
<td>National College for Statistics and Economic Analysis (ENSAE Senegal)</td>
<td>3</td>
<td>73</td>
<td>76</td>
</tr>
<tr>
<td>National College of Applied Economics (ENEA)</td>
<td>81</td>
<td>111</td>
<td>192</td>
</tr>
<tr>
<td>National College for Specialized Social Workers (ENTSS)</td>
<td>148</td>
<td>116</td>
<td>264</td>
</tr>
<tr>
<td>Multinational College for Telecommunications (ESMT)</td>
<td>242</td>
<td>470</td>
<td>712</td>
</tr>
<tr>
<td>National College for Social and Health Development (ENDSS)</td>
<td>297</td>
<td>288</td>
<td>585</td>
</tr>
<tr>
<td>National College for Maritime Training</td>
<td>1</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>National Civil Service College (EN)</td>
<td>57</td>
<td>297</td>
<td>354</td>
</tr>
<tr>
<td>Total</td>
<td>990</td>
<td>2,210</td>
<td>3,200</td>
</tr>
</tbody>
</table>

Source: Survey by Laboratoire Genre et Recherche Scientifique at IFAN-UCAD (2009).

4. Evolution in national vocational training colleges

National vocational training colleges mostly developed in the 1970s. They initially trained civil servants. With the onset of structural adjustment programmes, they can no longer guarantee employment to their graduates. Since 2000, new categories of vocational and technical training colleges have emerged with support from international partners, and these colleges have retained some measure of credibility in terms of the validity of their diplomas (see Table 3.12).

Table 3.12. Distribution of students in national vocational training colleges surveyed in 2008

<table>
<thead>
<tr>
<th>College</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senegal/Japan Vocational and Technical Training Centre (CFPT)</td>
<td>17</td>
<td>104</td>
<td>121</td>
</tr>
<tr>
<td>Centre for Entrepreneurship and Technical Development (CEDT<em>G15</em>)</td>
<td>64</td>
<td>516</td>
<td>580</td>
</tr>
<tr>
<td>National Training Centre for Maritime Fishing and Aquaculture Technicians (CNFT/PMA)</td>
<td>2</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Customs College</td>
<td>3</td>
<td>48</td>
<td>51</td>
</tr>
<tr>
<td>National Training College for Family and Social Economics (ENFEFS)</td>
<td>4</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>National Training College for Hotel Management and Tourism (ENHT)</td>
<td>71</td>
<td>54</td>
<td>125</td>
</tr>
<tr>
<td>National College for Statistics and Economic Analysis (ENSAE Senegal)</td>
<td>3</td>
<td>73</td>
<td>76</td>
</tr>
<tr>
<td>National College of Applied Economics (ENEA)</td>
<td>81</td>
<td>111</td>
<td>192</td>
</tr>
<tr>
<td>National College for Specialized Social Workers (ENTSS)</td>
<td>148</td>
<td>116</td>
<td>264</td>
</tr>
<tr>
<td>Multinational College for Telecommunications (ESMT)</td>
<td>242</td>
<td>470</td>
<td>712</td>
</tr>
<tr>
<td>National College for Social and Health Development (ENDSS)</td>
<td>297</td>
<td>288</td>
<td>585</td>
</tr>
<tr>
<td>National College for Maritime Training</td>
<td>1</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>National Civil Service College (EN)</td>
<td>57</td>
<td>297</td>
<td>354</td>
</tr>
<tr>
<td>Total</td>
<td>990</td>
<td>2,210</td>
<td>3,200</td>
</tr>
</tbody>
</table>

Source: Survey by Laboratoire Genre et Recherche Scientifique at IFAN-UCAD (2009).

RESULTS

The results of the study confirm the initial assumption that girls are better represented in private schools and in short-term courses. However, they are only predominant in the first cycle. Indeed, the entry criteria in the private sector are more flexible for students coming from an arts background, as it provides courses in the area of services, which attract more women, while the rigid structure of universities reduces training choices. Besides, girls are more concerned than boys with completing their training quickly and securing a job, because this is also the time when they want to get married.

However, whatever the sector, whether private or public, girls are fewer in the scientific courses and at higher levels. This situation can be explained by the fact that education policies have for a long time ignored the specificities of girls, both at primary and secondary level, and have not taken their difficulties into account.

- Gender insensitivity of the public higher education system and inadequate management of the private sector

There are many limitations in higher education, in both the public and private sectors, that have an adverse effect on girls. These are linked to the inadequacy of learning facilities in public universities, to the anarchic development of the private sector, and to the low capacity of national vocational training colleges.

Inadequacy of learning facilities in the public sector has a more negative impact on girls

The inadequacy of university structures to accommodate to the growing number of students, especially in Dakar, is far from being resolved due to the large numbers who are sent to UCAD (86 per cent of all university students). The learning conditions are increasingly difficult there, especially for girls who face accommodation problems. Male students tend to run student associations, who are responsible for room allocation. They also have easier access to scholarships, and are therefore unlikely to fail their first year. As for girls, they are more susceptible to dropout.

Differences in methods of supervision in the public and private sectors

In pedagogical terms, the high student-teacher ratio in the public sector leads to significant rates of failure. Indeed, as indicated by the research conducted by Niasse (2009), students in the private sector study in better conditions than their public sector counterparts.
As for the student-teacher ratio, 10:1 is the average in the private sector, against 4:1 at UCAD. At UCAD, this ratio can reach 12:1 in the Faculty of Arts and Humanities alone.

Sexism prevails in Senegalese universities due to its outdated referral system. Because of its lack of flexibility in terms of courses offered, girls are less likely to continue their studies at the highest level.

In fact, there is no policy that addresses the specific regulations for girls. For instance, registration to a postgraduate diploma course is only valid for one year, and if a female student gets pregnant, whether married or not, she is likely to be expelled from the programme if she is unable to attend classes or submit her dissertation before the deadline.

A poorly managed private sector that is unfavourable to girls

The private sector is experiencing steady growth. The initial growth started in the 1990s and increased further in the subsequent decade. Indeed, 10.8 per cent of private higher education institutions opened between 1990 and 1995, and 18.9 per cent between 1996 and 2000. Since then, the growth rate has considerably increased, since 29.7 per cent of the colleges surveyed were opened between 2001 and 2005 and 33.8 per cent between 2006 and 2008 (see Figure 3.13).

Figure 3.13. Evolution of higher education private schools

<table>
<thead>
<tr>
<th>Years</th>
<th>0%</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
<th>30%</th>
<th>35%</th>
<th>40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>ND</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>1995</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>35</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>2000</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
</tr>
<tr>
<td>2005</td>
<td>15</td>
<td>30</td>
<td>45</td>
<td>60</td>
<td>75</td>
<td>90</td>
<td>100</td>
<td>115</td>
<td>130</td>
</tr>
<tr>
<td>2010</td>
<td>20</td>
<td>40</td>
<td>60</td>
<td>80</td>
<td>100</td>
<td>120</td>
<td>140</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>2015</td>
<td>25</td>
<td>50</td>
<td>75</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>175</td>
<td>200</td>
<td>225</td>
</tr>
<tr>
<td>2020</td>
<td>30</td>
<td>60</td>
<td>90</td>
<td>120</td>
<td>150</td>
<td>180</td>
<td>210</td>
<td>240</td>
<td>270</td>
</tr>
<tr>
<td>2025</td>
<td>35</td>
<td>70</td>
<td>105</td>
<td>140</td>
<td>175</td>
<td>210</td>
<td>245</td>
<td>280</td>
<td>315</td>
</tr>
<tr>
<td>2030</td>
<td>40</td>
<td>80</td>
<td>120</td>
<td>160</td>
<td>200</td>
<td>240</td>
<td>280</td>
<td>320</td>
<td>360</td>
</tr>
</tbody>
</table>

There is still a significant margin of growth in the private sector. According to UNESCO’s standard, the student population should represent a minimum of 2 per cent of a country’s total population (UNESCO, 1998). Therefore, Senegal, with an estimated population of 11,343,328 in December 2007, should have a student population of at least 226,867 in both the private and public sectors. However, ANSD data indicate that the student population stood at 91,359 in 2007, indicating a deficit of 136,328 students.

While some schools have built a solid reputation, this is not the case for others, whose annual fees range between 200,000 (US $400) and 500,000 CFA (US $1,000) and who provide no guarantee that students will complete the cycle in which they are enrolled. Tuition fees in the first cycle vary between 200,000 (US $400) and 1,750,000 CFA (US $3,500). In the second cycle, they range between 300,000 (US $600) and 1,825,000 CFA (US $3,650), and in the third cycle, from 600,000 (US $1,200) to 4,150,000 CFA (US $8,300). Good schools charge an average annual tuition fee of 1,000,000 (one million) CFA (US $2,000). So is the case with the Higher Institute of Management, where annual tuition fees amount to 950,000 CFA (US $1,900) in the first cycle, 1,000,000 (US $2,000) in the second cycle and 5,000,000 CFA (US $10,000) in the third cycle.

Some schools offer a two-year course, but have no current first-year students. They explain this by the low enrolment rate. Indeed, without a critical mass of students, it is difficult for an institution to cover its overheads, which explains why some schools shut down after one or two years in operation. There are larger numbers of girls in the less credible schools.

Some schools have made no investment and merely rent a house from which they can be expelled at any time if they do not pay the rent. Sometimes, advertising promises internships abroad, but once students start the course, they realise that they have been misled after having already spent a lot of money.

The only requirement for opening a school is a prior declaration. Even though the national education authority insists on monitoring schools to ensure that terms of reference are complied with, questions can be asked about the oversight modalities. According to Niassé, some institutions are merely “diploma factories”, which means that they hand out phony diplomas to all and sundry. If they do not have enough qualified teaching staff, these institutions call upon UCAD postgraduate students, although they do not have the necessary teaching qualifications.

In spite of all these problems, the private sector attracts a larger number of girls because it offers subject areas related to the service industries, namely business, management and computing, which even attract girls coming from arts and humanities backgrounds.

Although the private sector is also open to new professions, there is little diversification in the courses offered, due to an abundance of accounting, management and business courses. The courses offered are not always consistent with the actual economic needs in sectors such as agriculture, fishing, and processing of local produce. Even though there is a strong demand from students for business and management courses, it does not mean that the job market will absorb them, except perhaps those that graduate from major schools who are recognised for quality. In fact, many schools enter into the sector of vocational training, but they generally only produce unemployed persons. Besides, the annual tuition costs for recognised training schools average 1 million CFA (US $2,000), which many students cannot afford, especially girls from less wealthy families.

The state provides subsidies to private institutions and bursaries to its students. According to the survey, 55 per cent of private institutions receive students that are sponsored by the state. However, this is for low cost training. As for diplomas, the Higher Education Authority co-signs the diplomas of some private institutions, as the implementation decree for Act 94-82 for the recognition of diplomas had not yet published at the time of this report.

Vocational and technical training institutions have their students take the state exam for greater credibility, but according to a teacher in this sector, the search for credibility leads to corruption practices, which lowers the value of these diplomas. All this shows that the private education sector is full of promise, but that one should be aware of the potential failures.

Vocational training national colleges

National vocational training colleges started developing in the 1970s and aimed to train civil service executives, but structural adjustment programmes put an end to systematic recruitment for the state. However, those that remained retained some credibility and help students acquire skills that they can offer on the market, even though the state – their main employer – has difficulties absorbing them.

Since 2000, new vocational colleges started to appear that are more in tune with the requirements of the labour market, but they have very few female students. They only account for 8 per cent of the students at the Senegal/Japan Vocational and Technical Training Centre and 11 per cent at the Centre for Entrepreneurship and Technical Development. Vocational training colleges have low annual fees at 50,000 CFA (US $100), which is affordable, but they can only accommodate a small number of students. These colleges only attract 4.5 per cent of baccalauréate holders, although they have started to offer evening courses.

• Training, the labour market, and the gender dimension

It is important to examine the link between courses provided and the labour market, and to look at how women fare in the subject areas that they generally choose. In Senegal, formal employment is barely growing. The public sector mostly hires into the areas of education and health. Employment is mostly driven by the demand from the primary sector (agriculture, livestock and forestry) and from the informal sector, but training colleges do not provide courses aimed at these sectors.

Public institutions are not concerned with employment opportunities for their graduates. As for private colleges, they provide various insertion strategies. They mainstream personal development, prepare students for the search for internships and employment. Some colleges help students develop projects and look for funding to create their own businesses. They create networks with companies and NGOs in order to help students familiarise themselves with the work environment through meetings and internships.
Some institutions set up a monitoring group and others create a department responsible for student placements. However, as they practically all offer the same kind of training, some branches such as marketing quickly become saturated, whereas this is still the subject area that most girls choose.

In the colleges surveyed, which mostly target professionals, there is no such insertion problem. Generally speaking, the management indicated that they have a high insertion rate in the market, but this remains to be checked, as many students said that they could not secure an internship or long-term employment.

Some female students who graduated from such colleges said that they started their own business: sewing workshops, hairdressing salons, etc. One of them, who manages a hairdressing salon, says that she is better equipped to manage her small business, but that her sole motivation for taking this option was to enter into paid employment.

CONCLUSION AND RECOMMENDATIONS
This descriptive study has aimed to describe the status of higher education, and to see how boys and girls are represented therein. It seeks to identify gender disparities that ought to be taken into account by the authorities in order to improve public policies on higher education. It also aims to examine the training on offer against labour market requirements.

This study has shown that the assumption that there are a growing number of girls entering into higher education is correct. In the face of inadequate public sector facilities, the private sector has proven to be better prepared to receive them and to offer them a better environment in which to thrive. However, this sector also faces a number of problems. Issues that affect both the public and the private sector require greater attention from the authorities.

1. Both in the public and in the private sector, there is still a low presence of girls in scientific and technical subject areas, whereas these lead to qualifications that are more sought after in the labour market. These disparities reveal some of the weaknesses in the overall education policy from primary and even preschool level.

2. Universities are still the main direction for most baccalaureate holders, and it is important that the state and the various institutions contribute to improving the living conditions of female students on university campuses and to their retention at all levels of study. To achieve this, it is crucial to introduce legislation that considers their specific needs.

3. Even though public universities are beginning to diversify their courses, they should draw inspiration from the flexibility of the private sector, which provides more possibilities for professional or married women to study outside the standard hours. To withstand this competition, universities are indeed beginning to provide services to baccalaureate holders, but these remain very limited.

4. Management and marketing courses offered by the private sector already attract a larger number of girls and run the risk of reaching saturation point. This can lead to underemployment among women graduates in these areas, especially as most schools provide the same sets of skills, and most girls chose to study these subjects.

5. The state’s role in ensuring the quality of the teaching delivered in private institutions is crucial as the tuition costs are relatively high. Therefore, it would prove disastrous to invest in training that did not offer any perspectives.

6. New courses being offered in the private sector, especially in the area of new technologies, can become a new outlet for young women, but they need more support so that the cost barrier can be lifted.

7. Initially designed for the civil service, vocational training colleges have not adapted well to their new environment, in spite of their teaching quality. More care should be taken to ensure that new subject areas being introduced attract a larger number of female students.

This study raises the following issues that need further discussion:

1. Any investment made by parents for their daughters’ primary and secondary education seems to be reversed in higher education. All elements seem to point to the fact that whenever girls show their readiness to continue their studies, even when they tend to go into shorter-term courses, the families are prepared to invest in them.

2. Even though girls face more difficulties in entering higher education, they manage to remain there in large numbers once they have made that step. In the public sector, female students are largely present in the third cycle and in health and education courses, where they are the majority; whereas in the private sector they increasingly enrol in new subject areas such as management, new information technologies, and engineering. More in-depth research needs to be done into these developments.

3. In the absence of an analysis of teaching quality in the private sector, a more thorough study should be conducted on the insertion of diploma holders in the job market, with a focus on a few selected schools. Indeed, as stressed by Hindriks, the market is the best judge of the relevance and quality of training (in Niasse, 2009).

1. The most widely used indicator of the relevance of curricula is the rate of employment after six months (Hindriks, 2003, pp. 5-6). Therefore, a diploma does not have any inherent value; its value is determined by the labour market.
Primary school girls in Africa experience challenges that hinder them from acquiring the literacy and numeracy skills they need for a valid primary education. This poor grounding follows African girls into secondary education where many struggle with science and mathematics subjects in particular, reducing their chances of continuing with these subjects at post-secondary level and eventually starting careers in science and technology fields. Of the secondary schoolgirls who successfully complete their education, not all go on to higher education. Those who do encounter difficulties related to academic performance and completion as well social problems of gender bias, harassment and even violence. Once these young women complete their education, they face another set of challenges in the labour market.

While the paragraph above makes bleak reading, the research gathered in this volume has identified positive outcomes in girls’ and women’s education in recent years and put forward a number of recommendations for education policy and practice that can add to the encouraging trends if concerted efforts are made to adopt them.

Primary education – improving academic achievement for girls

Girls’ learning achievement can be improved through the implementation of policies that ensure gender parity not only in the recruitment of teachers and school principals but in their assignment to roles at various levels of the education system. Outside of the family unit, the first influential model children encounter is the teacher. It is therefore crucial that a balance is established between male and female teachers throughout primary education. Female principals tend to influence gender balance among teaching staff by encouraging female teachers to teach in higher grades where they are currently under-represented. Ministries of education should also be encouraged to increase the number of female teachers in rural schools so that girls in rural areas enjoy the same conditions and learning opportunities as those in urban areas. Currently, a larger proportion of qualified female teachers are based in urban schools.

Secondary education – creating enabling learning environments for girls in science, mathematics and technology

Girls’ performance in science, mathematics and technology subjects can be strengthened if gender policies geared towards establishing equality in these subjects are institutionalised within learning structures at both secondary and tertiary levels. All too often, neither staff nor students are aware of gender policies or gender mainstreaming strategies within their own institutions.

Conclusion and recommendations for policy and practice

Teacher attitudes and practices contribute significantly to creating or redressing gender inequality in schools. Teachers have a propensity to influence the learning achievements of pupils by judging children’s capacities based on gender stereotypes and assigning them tasks that implicitly reflect the roles that society assigns to men and women. Teacher training programmes must integrate gender issues and raise awareness on the creation of gender inequalities in school in order to make teaching practice gender-responsive. FAWE’s gender-responsive pedagogy model can become a valuable component of both pre-service and in-service teacher training.

However, as regards both the relocation of teachers to rural areas and professional development interventions for all teachers, particular attention must be paid to the micro-learning conditions at school level that are likely to have a direct impact on girls’ performance. Challenging situations such as under-resourced schools, large class sizes, and lack of support for teachers can make it impossible for capable teachers to make an impact. Ignoring the contexts within which teachers work and the broader social context of educating girls risks slowing the pace of progress.

A further approach to improving learning outcomes for girls recommended by the studies is to strengthen literacy programmes for parents, particularly mothers, and to encourage the creation of mothers’ associations. The greater the literacy of parents, the higher the chances that their children will attend school and succeed academically. For girls in particular, literate mothers play an important role in contributing to academic success.
Building the capacity of primary school teachers to understand and teach science and mathematics at the pre-service training level is crucial for enhanced performance at post-primary level. Female disadvantage in mathematics worsens through primary school and poor grounding in science and mathematics at primary school ultimately affects performance in these subjects at secondary level. Furthermore, in order to enhance teaching methodology and learning outcomes in secondary schools, teaching staff should not only be trained in their subject area but in pedagogy as well. Curricula should also be made relevant to the contexts in which students live and learn.

Establishing partnerships between secondary schools and universities is a valuable way of strengthening students’ foundations in science, mathematics and technology subjects and addressing negative attitudes. Secondary schools can help boost the participation of female students at higher education level by identifying students capable of performing well in these subjects and introducing incentives such as awards for those who perform well. Learning institutions should also provide attachment programmes, bridging courses, tutorials, and time for consultations to help students improve their grasp of key concepts, test these through practical application, and improve confidence, independence and academic performance.

Higher education – promoting equity and supporting academic success for women

Affirmative action policies have created opportunities for more women to access higher education yet these women do not necessarily receive the support they need to achieve strong academic performance. The successful implementation of affirmative action policies could include strategies to ensure the academic success of these students, including training in study skills, tutorial services and counselling.

Gender policies adopted by higher education authorities must be effectively implemented within universities, colleges and other centres of learning if gender equality in tertiary education is to become a reality. Measures to sensitise decision-makers, teaching and administrative staff and other key stakeholders in tertiary education and to build their capacity to mainstream gender policies are essential. These could include advocacy campaigns on gender policy and studies based on sex-disaggregated data that highlight education trends from a gender perspective. Awareness campaigns on gender issues in higher education must equally target students and parents.

A clearly defined policy on sexual harassment must also be institutionalised in centres of tertiary education and strictly adhered to. Sexual violence and harassment are serious challenges to the participation of female students in academic, extra-curricular and social activities. In addition, education policy must facilitate the re-admission of women who have children in the course of their education.

Support services for female students are essential within learning institutions, including for women who relocate from rural to urban areas to continue their education. Gender offices, women’s clubs, day-care centres for students with small children, sexual and reproductive health and rights services, counselling and career guidance can all contribute to a healthier, safer and more conducive learning environment for female students. Services through which students can report violence, abuse, sexual harassment and other issues of concern are equally important. Moreover, infrastructure and facilities including accommodation and hygiene facilities must be gender-responsive and provide safe and healthy living conditions for women on campuses.

The recommendations above form the basis for dialogue and engagement at all levels of education systems in sub-Saharan Africa. It is hoped that sustained advocacy based on these recommendations will influence education stakeholders to act for greater gender-responsiveness in education on the continent.