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Sustainable Development Goal 4 and the Quality of Education in Zambia

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Abstract: The purpose of this paper was to know the sustainable development goal 4 and find out the quality of education in Zambia. The quality of education was measured by the number of primary and secondary schools, enrolment of students, dropout rate, the equity indicators – gender parity index and student-teacher ratio and quality indicators like exam pass rate and infrastructure. The study concluded that the growth rate of schools under private/church/community was higher than the Government run schools during the study period. There prevails inequality between different provinces with regard to the availability of schools. The average annual growth rate in enrolment for grade 1-12 for female students was higher than the male students, whereas, in public universities the percentage of enrolment for male students was higher than female. The dropout rate was higher for female than male students, due to early pregnancy. The gender parity index increased due to the policy of the Government towards girls. To achieve the sustainable development goal for education, the study suggested that the teachers in rural areas should be provided better service conditions, education should be enhanced according to the needs of the economy and student loan scheme should be initiated by the banks and financial institutions.

Keywords: Primary schools; Secondary schools; Enrolment of students; Dropout rate; Equity indicators; Quality indicators.

1. Introduction

The Sustainable Development Goals (SDGs) are the successors to the Millennium Development Goals (MDGs). The MDGs were supposed to be achieved by 2015. A further process was needed to agree and develop the Development Goals for 2015-2030. On 25 September 2015, the 193 countries of the UN General Assembly adopted the 2030 Development Agenda, known as, “Transforming Our World: the 2030 Agenda for Sustainable Development”. There are 17 Goals with 169 targets covering a broad range of sustainable development issues. These included ending poverty and hunger, improving health and education, making cities more sustainable, combating climate change and protecting oceans and forests (UN General Assembly, 2014).

The Sustainable Development Goal 4 is about Education, which states, “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (UNDP). Eric Hanushek and Ludger (2015) revealed that the most important determinant of economic growth is the “Knowledge Capital” of nations. This shows the importance of Goal 4, as achieving this goal provides the resources to reduce poverty, to improve health, to provide inclusive growth and to reduce inequality within and between countries. According to OECD, besides access to school improving the quality of schools provides larger economic impact for both developing and developed countries (OECD, 2015). The cumulative growth in real GDP since 1994 up to 2013 has been three times more, moving Zambia from a poor income country to a prospering lower middle income country (EFA, 2015).

The Sustainable Development Goal 4 has 7 targets. They are (UN):

Target 1: By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.

Target 2: By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.

Target 3: By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.

Target 4: By 2030, substantial increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

Target 5: By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.

Target 6: By 2030, ensure that all youth and a substantial portion of adults, both men and women, achieve literacy and numeracy.

Target 7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable life styles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

1.1. Quality Education

According to the Republic of Zambia (Ministry of Education, 2006) quality in education was defined as “the extent to which education outcomes are relevant to societal expectations, such as productivity and improved ways of doing things at individual and societal level. The quality in education could be measured in terms of improved teacher training, improved availability of teachers, improved relevance of the curriculum and adequate supply of learning and teaching materials. According to the Ministry of Education, Science, Vocational Training and Early Education (MESVTEE, 2014) there was no one agreed definition of quality of education. However, it has highlighted the following definitions of quality of education.

It has defined quality of education as relevance of what was taught and learned to how well it fitted the present and future needs of the particular learners in question, given the particular circumstances and prospects. The quality of education was considered as the determination of standards, appropriate methods and quality requirements by an expert body, accompanied by a process of inspection or evaluation that examined the extent to which practice met those standards. The quality of education was treated as education which included student outcomes and the learning environment that helped to produce those outcomes. The quality education was seen as that education which best fitted the present and future needs of the particular learners in question and the community, given the particular circumstances and prospects.

According to UNESCO (2005) the quality of education was identified as learners' cognitive development and the role of education in promoting values and attitudes of responsible citizenship and in nurturing creative and emotional development. Zambia National Assessment Survey Report (2012) stated that the quality education should prompt individuals' life skills. The Report defined life skills as abilities that promoted positive behavior that enabled individuals to deal effectively with the demands and challenges of everyday life. Ministry of Education (1996) stated that it would collaborate with the institutions responsible for training in practical and life skills disciplines to expose learners at an early age and at all levels to the culture of entrepreneurship in school. The pupils would specifically be introduced to useful and relevant survival and world-of-work skills, such as computer and agricultural sciences, crafts and other technical skills.

1.2. Objectives

The general objective of this paper is to find out the quality of education in Zambia. The specific objectives are to:

1. Know the number of Primary and Secondary Schools by running agency
2. Find out the enrolment of students by gender for Grades 1 to 12 and Universities.
3. Enquire the dropout rates in primary and secondary schools
4. Investigate the equity indicators like gender parity index and pupil-teacher ratio.
5. Research the quality indicators, like exam pass rate and infrastructure.

2. Materials and Methods

The study used secondary data from 2005 to 2014. The sources of data were the Ministry of Education, UNDP and UNESCO. The quality of education was measured by the number of schools, enrolment, dropouts, gender parity index, pupil-teacher ratio, exam pass rate and infrastructure, i.e., class rooms, laboratories and libraries. The dropout rate was measured by the proportion of students who leave the system without giving grade in a school year. The gender parity index indicates the ratio of female to male students. The gender parity index less than one means that there were more male students than female students and vice versa. The children with special needs included hearing, intellectual, physical, visual impairments and with special learning difficulties. The availability of infrastructure was measured by class rooms, laboratories and libraries. Simple percentages and ratios were calculated wherever needed.

3. Results and Discussion

3.1. Number of Primary and Secondary Schools Run by Different Agency

Table (1) shows the number of primary and secondary schools run by different Agencies.

Table-1. Number of Primary and Secondary Schools Run by Different Agencies in Zambia from 2005 to 2014

Agency	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Average annual growth rate 2005 - 2014
GRZ & GRANT AIDED	4979	5156	5377	5254	5514	5656	5719	5720	5942	6090 (63.78)	2.3
PRIVATE, COMMUNITY & CHURCH	2389	3027	3219	3540	3269	3481	3274	3302	3542	3458 (36.22)	4.2
TOTAL	7368	78183	8596	8794	8783	9137	8993	9022	9484	9548 (100.0)	2.9

Source: The Republic of Zambia (MOE) Educational Statistical Bulletin 2014.

Note: Figures in the parentheses are percentages

Table (1) shows that out of 9548 schools run by different agencies in 2014, the number of schools run by Government of Republic of Zambia (GRZ) and Grant-in Aid, was 63.78 percent, where as the percentage of schools run by private, community and church management was 36.22 percent. This shows the commitment of the Government of Zambia to develop education sector so that the economic development could be faster. The average annual growth rate of GRZ and Grant Aided schools from 2005 to 2014 was 2.3 percent, whereas, it was 4.2 percent with respect to private, community and church management. The average annual growth rate of all the schools during this period was 2.9 percent.

3.2. Number of Primary Schools by Location and Province in Zambia in 2014

Table (2) shows the number of Primary Schools by Location and Province in Zambia in 2014.

Table-2. Number of Primary Schools by Location and Province in Zambia in 2014

Province	Urban	Rural	Total
Central	115 (11.3)	907 (88.7)	1022 (11.7)
Copperbelt	561 (54.0)	478 (46.0)	1039 (11.9)
Eastern	58 (5.6)	986 (94.4)	1044 (11.9)
Luapula	40 (6.4)	586 (93.6)	626 (7.2)
Lusaka	510 (64.8)	277 (35.2)	787 (9.0)
North-Western	34 (4.6)	670 (95.2)	704 (8.0)
Northern	52 (5.9)	833 (94.1)	885 (10.1)
Southern	134 (12.1)	978 (87.9)	1112 (12.7)
Western	43 (5.1)	804 (94.9)	847 (9.7)
Muchinga	47 (6.8)	641 (93.2)	688 (7.9)
Total	1594 (18.2)	7160 (81.8)	8754 (100)

Source: The Republic of Zambia, Ministry of Education (MOE) Educational Statistical Bulletin (2014), p. 9

Note: Figures in the parentheses are percentages

The table (2) shows that out of 8754 total Primary Schools in the country, 81.8 percent were located in Rural Areas and 18.2 percent in the Urban Areas. The Copperbelt Province had higher number of primary schools (561) in urban areas, whereas, the North-Western Province had lower number of primary schools (34) in 2014. The primary schools located in rural areas were the highest in Eastern Province (986) and lowest in Lusaka province (277). There prevails inequality between different provinces with regard to access to education.

3.3. Number of Secondary Schools by Location and Province in Zambia in 2014

Table (3) shows the number of Secondary Schools by location and province in Zambia in 2014

Table-3. Number of Secondary Schools by Location and Province in Zambia in 2014

Province	Urban	Rural	Total
Central	30 (41.1)	43 (58.9)	73 (9.2)
Copperbelt	111 (75.5)	36 (24.5)	147 (18.5)
Eastern	17 (20.7)	65 (79.3)	82 (10.3)
Luapula	07 (11.1)	56 (88.9)	63 (7.9)
Lusaka	91 (79.8)	23 (20.2)	114 (14.4)
North-Western	12 (14.6)	70 (85.4)	82 (10.3)
Northern	17 (42.5)	23 (57.5)	40 (5.0)
Southern	40 (37.7)	66 (62.3)	106 (13.4)
Western	12 (35.3)	22 (64.7)	34 (4.3)
Muchinga	11 (20.8)	42 (79.2)	53 (6.7)
Total	348 (43.8)	446 (56.2)	794 (100)

Source: Government of Zambia, MOE, Educational Statistical Bulletin 2014, p. 9

Note: Figures in the parentheses are percentages

It may be observed that 43.8 percent of Secondary Schools were located in urban areas and 56.2 percent were located in rural areas. In Copperbelt Province highest number of secondary schools were located in urban areas and their number was the lowest in Muchinga Province. Whereas, in North-Western Province highest number of Secondary Schools were located in rural areas whereas, in Western Province they were the lowest. Rural-Urban inequality was observed in access to education.

3.4. Enrolment by Sex in Grade 1 to Grade 12 from 2009 to 2014

Table (4) shows the enrolment by sex from grade 1 to grade 12 from 2009-2014.

Table-4. Enrolment by Sex in Grade 1 to Grade 12 from 2009 to 2014

Sex	2009	2010	2011	2012	2013	2014	Average Annual Growth Rate 2009-14
Male	1846945	1708012	1858574	1968038	1935949	2035339	2.0
Female	1770215	1682105	1795135	1911399	1911399	1984127	2.3
Total	3617160	3390117	3653709	3879437	3818336	4019466	2.1

Source: Republic of Zambia, MOE, 2014 Education Statistics Bulletin, p.11

Table (4) shows that the average annual growth rate of enrolment from grade 1 to 12 during 2009 and 2014 was 2.1 percent. The average annual growth rate during this period for female was higher (2.3 percent) than male (2.0 percent) due to policy of the Government in favor of girls.

3.5. Dropout Rate by Sex from 2007 to 2014

Table (5) shows the dropout rate by sex from 2007 to 2014 in Zambia

Table-5. Dropout Rate by Sex from 2007 to 2014 in Zambia

Grade	2007	2008	2009	2010	2011	2012	2013	2014
1 to 7 Male	2.0%	1.7%	1.8%	1.9%	1.7%	1.6%	1.4%	1.5%
Female	2.9%	2.7%	2.9%	2.7%	2.6%	2.3%	2.1%	2.1%
Total	2.4%	2.2%	2.4%	2.3%	2.2%	1.9%	1.8%	1.8%
8 to 12 Male	0.8%	0.6%	0.6%	0.6%	0.9%	0.5%	0.7%	0.6%
Female	2.1%	1.7%	1.8%	1.6%	2.2%	1.6%	1.7%	1.8%
Total	1.4%	1.1%	1.1%	1.1%	1.4%	1.0%	1.2%	1.1%

Source: Republic of Zambia, MOE, 2014 Education Statistics Bulletin, p. 22.

The total dropout rate for grade 1 to 7 was higher than grade 8 to 12 due to poverty. The dropout rate for female was higher than male due to child pregnancies. The total dropout rate and the dropout rate for female decreased during the period under study due to the policies adopted by the Government to reduce dropout rate.

3.6. Gender Parity Index for Grade 1-7 and Grade 8-12 from 2007 to 2014 in Zambia

Table (6) shows the gender parity index for grade 1-7 and grade 8-12 from 2007 to 2014

Table-6. Gender Parity Index for Grade 1-7 and Grade 8-12 from 2007 to 2014 in Zambia

Grade	2007	2008	2009	2010	2011	2012	2013	2014
1 - 7	0.96	0.96	0.99	0.99	0.97	0.99	0.98	0.99
8 - 12	0.83	0.82	0.94	0.86	0.82	0.80	0.84	0.85

Source: Republic of Zambia, MOE, 2014 Education Statistics Bulletin, p.25

The gender parity index (the ratio of female to male pupils) was less in grades 8-12 than grades 1-7 due to early pregnancies. The gender parity index increased for both grades 1-7 and grades 8-12 during the study period, i.e., from 2007 to 2014, due to facilities provided by the Government for the girls, for example, facility given to the pregnant girls to join the school after delivery, etc.

3.7. Number of Children with Special Needs (CSEN) in All Schools by Sex and Year from 2007-2014

Table (7) shows the number of children with special needs in all schools by sex and year

Table-7. Number of Children with Special Needs in all Schools by Sex and Year

School	2007	2008	2009	2010	2011	2012	2013	2014
Primary								
Male	89291	88420	110273	102071	90494	55004	55528	46322
Female	80793	80446	91842	96323	84867	51855	51743	42813
Total	170084	168866	202115	198394	175361	106859	107271	89135
Secondary								
Male	2687	1826	1826	1880	2351	146	396	3797
Female	2558	1906	1906	2417	2561	215	482	3674
Total	5245	3732	3732	4297	4912	361	878	7471

Source: Republic of Zambia, MOE, 2014 Education Statistics Bulletin, p. 33

The number of students with special needs include those students who were suffering from hearing, physical, visual, specific learning difficulties, etc. The number of CSEN students in primary schools was higher than in secondary schools during the period under study. The number of female students in both primary and secondary schools was less than male students. The number of CSEN students in secondary schools increased in 2014 due to Government policy to support these students.

3.8. Number of Pregnancies and Re-admissions by Grade Groups from 2007-2012

Table (8) shows the number of pregnancies and re-admissions by Grade Groups from 2007-12

Table-8. Number of Pregnancies and Re-admissions by Grade Groups from 2007-2012

School	2007	2008	2009	2010	2011	2012	2013	2014	% increase in 2014 over 2013
Primary									
Pregnancies	11391	12370	13634	13769	13929	12753	12500	13275	6.2
Re-admissions	3870	4692	5517	5034	5106	4915	4492	5322	18.5
Secondary									
Pregnancies	1752	1566	1863	1817	1778	2096	2428	3103	27.8
Re-admissions	1082	1019	1162	1033	924	1086	1337	2069	54.7

Source: Republic of Zambia, MOE, 2014 Education Statistics, p. 36

The pregnancies in primary schools increased by 6.2 percent in 2014 comparing to the previous year, whereas, it was increased by 27.8 percent in the secondary schools during the same period. Re-admissions in secondary schools in 2014 was 54.7 percent over the previous year due to Government policy to re-admit the pregnant girls after delivery.

3.9. Teachers in All Schools by Sex from 2007 to 2014

Table (9) shows the number of teachers in all schools by sex from 2007 to 2014

Table-9. Number of Teachers in All Schools by Sex from 2007 to 2014

School/Sex	2007	2008	2009	2010	2011	2012	2013	2014
Primary								
Male	29531	30989	30088	30901	30364	34474	35146	36105(46.5)
Female	27364	30822	30822	32151	31822	38493	38403	42290 (53.5)
Total	56895	61811	60865	63052	65014	72967	73549	78395 (100)
Secondary								
Male	8831	9293	9645	9843	8845	10785	11273	12551(55.9)
Female	5886	6119	6852	6979	6078	7854	8342	9867 (44.1)
Total	14717	15412	16497	16822	12947	18639	19615	22418 (100)
Grand Total								
Male	71612	77223	77362	79874	77961	91606	93164	100813(100)
Female	38362	40282	39733	40744	39209	45259	46419	48656 (48.3)
	33250	36941	38229	39130	36442	46347	46745	52157 (51.7)

Source: Republic of Zambia, MOE, 2014 Education Statistics Bulletin, p. 38

Note: Figures in the parentheses are percentages

In 2014, the percentage of female teachers in the country was more (51.7) than the male teachers (48.3). The percentage of female teachers in the primary schools was higher (53.5 percent) than male teachers (46.5 percent). Whereas, in secondary schools the percentage of male teachers (55.9) was higher than female teachers (44.1). There prevails gender disparity between male and female teachers in secondary schools. There was an increase of 8.2 percent in the number of teachers in 2014 comparing to the previous year, due to the government policy to employ more teachers to improve the quality and access to education in the country.

3.10. Student Teacher ratio in All Schools by Class Range in 2014

Table (10) shows student teacher ratio in all schools by class range in 2014.

Table-10. Student Teacher Ratio in All Schools by Class Range in 2014

Grade 1-4	Grade 5-7	Grade 1-7	Grade 1-9	Grade 8-9	Grade 10-12
56.9	52.7	55.3	47.2	23.7	36.0

Source: Republic of Zambia, MOE, 2014 Education Statistics Bulletin, p. 44

The student teacher ratio in all the schools by class range in 2014 shows that it was higher (55.3) for grade 1-7 than grade 10-12 (36.0). For grade 8-9 it was the lowest (23.7). There is need to reduce student teacher ratio to improve quality of education.

3.11. Examination Pass Rates in Grade 12 by Sex in 2014

Table (11) shows the examination pass rates in grade 12 by sex in 2014.

Table-11. Examination Pass Rates in Grade 12 by Sex in 2014.

Male	Female	Total
58.5	52.6	55.9

Source: Republic of Zambia, MOE, 2014 Education Statistics Bulletin, p. 48

The examination pass rate in grade 12 in 2014 was 55.9 percent. The pass rate for male is higher than the female. There was disparity in examination pass rate between male and female students.

3.12. Infrastructure Facilities in Primary and Secondary Schools in 2014

Table (12) shows the infrastructure facilities in primary and secondary schools in 2014.

Table-12. Infrastructure Facilities in Primary and Secondary Schools in 2014.

School	Class-rooms Perm	Class-rooms Temp	Class-rooms Incom	Labs Perm	Labs Temp	Labs Incom	Lib Perm	Lib Temp	Lib Incom
Primary	37584 (86.54)	5844 (13.46)	4324 (9.95)	2367 (71.72)	933 (28.28)	470 (14.24)	1268 (85.15)	221 (14.85)	91 (6.11)
Second	8844 (97.26)	249 (2.74)	380 (4.18)	1031 (94.32)	62 (5.68)	130 (11.89)	303 (88.59)	39 (11.41)	24 (7.01)

Source: Republic of Zambia, MOE, 2014 Education Statistics Bulletin, p.53.

The number of permanent, temporary and incomplete class rooms, laboratories and libraries for primary schools was more than the secondary schools. In both primary and secondary schools the percentage of incomplete laboratories was more than the incomplete class rooms and libraries due to shortage of funds.

3.13. Enrolment of Students in Public Universities in 2014

Table (13) shows the enrolment of students in public universities in 2014

Table-13. Enrolment of Students in Public Universities in 2014

Male	Female	Total
13146 (57.8)	9607 (42.2)	22753 (100)

Source: Republic of Zambia, MOE, 2014 Education Statistics Bulletin, p. 56

Note: Figures in the parentheses are percentages

The enrolment of students in public universities in 2014 shows that the percentage of male was higher (57.8) than female (42.2). There was no equal access to university education by male and female students.

4. Conclusion

The following conclusion emerged from the foregoing. To increase enrolment of students in the schools, free-lunch should be provided and for university students loan facility should be provided by banks and financial institutions. Since the main reason for dropouts was early pregnancies, the Government should implement the existing laws to stop early pregnancies and re-admission of pregnant girls after delivery. The gender parity index should be improved by providing facilities to the girl students. Student teacher ratio should be reduced to improve the quality of education. The Government should allocate more funds for construction of class rooms, laboratories and libraries. The quality of education in universities should be enhanced as per the needs of the economy.

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