

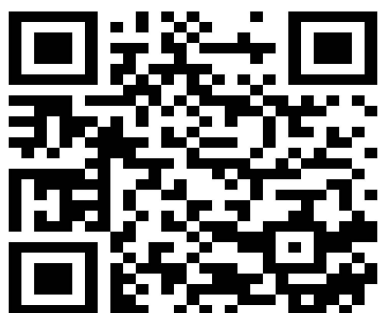


## Education and language

# Comparison of School Performance of Boys and Girls in Mathematics in CM, in The School District of OUENZE I , Brazzaville, Republic of Congo

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### Abstract :

Our research study focused on the comparison of the academic performance of boys and girls in mathematics in CM in the school district of Ouenze I in Brazzaville . To carry out this study, we relied on documentary analysis, observation and interviews. The results obtained allowed us to identify the difference between the academic performance of boys and girls in mathematics in CM. The documentary analysis through statements and report cards show that girls presented better performance in calculation writing compared to the boys. The demonstration based on these differences shows that the marks achieved by the girls are closer to the average. The themes that accentuate this difference are numeration, geometry and measurement through written calculation . Since the gap is not so great, it would therefore be appropriate to say that the Congo is making an effort to educate boys and girls in the same conditions.

**Keywords:** Comparison- Gender- School performance.

## Introduction

Education and instruction are seen as fundamental factors for the socio-economic and cultural progress of a country. This explains why many countries devote enormous resources to education.

This concern consolidates the recommendation of Article 26 of the Universal Declaration of Human Rights of December 10, 1948, which stipulates that: *every citizen has the right to education in order to promote his integration into society and contribute to the development of that -this*. This recommendation remains more relevant than ever.

On this subject, A. GESELL writes; " *the child who comes into the world only becomes a complete man when he is socialized, education to a large extent shapes him both intellectually and*

*emotionally*".

In the same order of ideas, with regard to education, objective n°2 of the E T (education for all) which requires that we must: *Ensure that from here*

*2015, all children, especially girls, children in difficulty and those belonging to ethnic minorities, have the opportunity to access compulsory and free quality primary education and to follow it to completion. Returning to girls, the EP Tsouligne monitoring report on objective 5, which must ensure that girls have equitable and unrestricted access to quality basic education with the same chances of success*<sup>2</sup>

The Congo, our country has not remained on the sidelines of this question. The fundamental law of March 1992, stipulates in its article 23 that: *the right to education is guaranteed. Education is placed under the scientific and pedagogical authority of the state...schooling is compulsory until the age of sixteen . . . . This article is supported by Law 25/95 of November 17, 1996 amending School Law No. 008/90 of September 6, 1990 and reorganizing the education system in the Republic of Congo which stipulates in its article 2: any child living in the territory of the Republic of the Congo has the right without distinction of origin, nationality, sex, creed, opinion, or fortune to an education which ensures the full development of his intellectual , artistic, moral and physical aptitudes as well as the training professional.*<sup>3</sup>

In the first moments of the colonial school, the education of the young girl was put in the background; this was not an issue for society. Thus before nationalization, some schools were reserved only for boys and others for girls; the case in Brazzaville of certain schools such as Saint Michel de Ouenze I reserved for boys and Immaculée conception reserved for girls. But from 1966 with the nationalization of these schools, they became mixed (girls and boys receive instruction under the same conditions and the same structures).

Today, the education of girls in particular has socio-economic benefits for society as a whole. Girls perform the same functions as boys: they are ministers, deputies, doctors, administrators, university professors... This is how gender equality, enshrined in human rights, is at the heart of the achievement of the Sustainable Development Goals (SDGs) by 2030, in particular SDG4 quality education and target 4.6 which stipulates *"By 2030 ensure that all young people and a considerable proportion of adults , men and women, know how to read, write and count"* ( Unesco, p7 ).

The World Bank's study on gender and economic

development states that *"over the past three decades, women's issues - and more recently those concerning gender differentiation - have gained a lot of prominence in various forums devoted to development.....Locally and internationally, women have been able to organize themselves effectively, so that women's rights have been added to the list of human rights. They have raised important questions about gender differentiation in policy-making.* (World Bank, 2003, p31)

To underline this interest, the Forum of Women Educators of Africa (FAWE), in particular its Congolese section, has organized a day of competition every year since 2010 reserved for girls admitted to the various state examinations who have obtained an average greater than or equal to 14. C is an opportunity to stimulate young girls in order to push them to success. In Congo, the disparities between girls and boys do not arise in terms of access, but in terms of completion of the cycles, but we note that the female participation decreases as one advances in the school curriculum. .

Girls/boys parity is 1.2 in preschool, 0.9 in primary, 0.7 in middle school, 0.3 in high school and 0.1 in university. And very few girls are enrolled in science and technology courses. We noted, during our supervision at the Immaculée conception school in Ouenzé1 , that in mathematics from the preparatory course to the middle school course, the work of the girls is slightly lower than that of the boys.

In view of the numerical importance of women in the Congolese population, namely 51.07% of women against 48.03% of men according to the Congolese household survey (ECOM) 2005, national opinion now agrees oday to recognize beyond a simple question of law, legality is an issue of human, harmonious and sustainable development. (...),

In FAWE's gender mainstreaming interventions there is the model, Science, Mathematics and Technology (SMT) it aims to increase girls'

interest in science subjects, as well as their participation and performance in school and this at all levels.

Through this model, teachers are trained to learn how to integrate and use SMT curricula, SMT pedagogical and educational materials, and gender-responsive SMT practices in the classroom.

### **I.Theoretical approach to mathematics (in the discussion)**

With regard to the theoretical approach to mathematics, a working group from the Yvelines Academic Inspectorate (2008: 32-33)<sup>25</sup> notes that the student must *develop ; at the end of the apprenticeship, four qualities dispensable in his life. We distinguish the following qualities: skills, knowledge, abilities and attitudes.*

On skills, this working group points out that the student must master the main elements concerning the areas of mathematics.

As a result, “in each of the fields of calculation, geometry and data management, mathematics provides tools for acting, choosing and deciding in everyday life. They develop logical thinking, the capacity for abstraction and vision in the plane and in space through the use of formulas, models, graphs and diagrams. It is also about developing logical reasoning and a taste for demonstration. »<sup>26</sup>

For this “the mastery of the main elements of mathematics is acquired and practiced essentially by solving problems, in particular from situations close to reality. The skills acquired in mathematics condition the acquisition of a scientific culture. With regard to knowledge, it is necessary to create as soon as possible in primary school automatic calculations, in particular the mastery of the four operations which allow mental calculation . It is also essential to learn to demonstrate and to reason. It is also necessary to understand concepts and techniques (calculation, algorithm) and to memorize them in order to be able to use them. Students should know in matters

of numbers and arithmetic;

- Decimal numbers, relative numbers, fractions, powers, order, compare);
- The four operations and their meaning; basic techniques of mental calculation
- The remarkable identities;
- Proportionality: linearity property, graphical representation, proportionality table, *cross product* or *rule of 3*, percentage, scale;
- The usual representations: tables, diagrams, graphs; tracking on an axis and in the plane;
- In geometry:
- The elementary geometric properties of the following plane figures and solids: square, rectangle, rhombus, parallelogram, triangle, circle, rectangular parallelepiped, cylinder, sphere;
- The notions of parallel, perpendicular, perpendicular bisector, bisector, tangent (at ????)
- The transformations: symmetries, enlargement and reduction;
- Regarding sizes and measurements:
- the main quantities (units of measurement, formulas, calculations and conversions): length, area, capacity, volume, mass, angle, duration, speed, density, number of revolutions per second. »

We point out that at the end of compulsory schooling, every pupil must have a coherent representation of the world based on knowledge.

In the framework of capacities, we specify, as underlined by the Yvelines Academic Inspectorate, (2008: 33) that at the end of compulsory school, *students must be able to apply the principles and processes basic mathematics in daily life, in his private life as well as in his work.*

To do this, he must be able to:

- “- to reason logically, to practice deduction, to demonstrate;

- to communicate, in writing and orally, using an appropriate mathematical language;
- *to carry out*: by hand, an isolated calculation on numbers in decimal writing of reasonable size (addition, subtraction, multiplication, division);
- on the calculator , an isolated calculation on relative numbers in decimal writing: addition, subtraction, multiplication, decimal division to within 10<sup>-n</sup>, calculation of the square, the cube of a relative number, square root of a positive number;
- mentally simple calculations and quickly determine an order of magnitude;
- compare, add, subtract, multiply and divide numbers in fractional measure in simple situations; draw lines using the usual instruments (ruler, square, compass, protractor):
- parallel, perpendicular, perpendicular bisector, bisector;
- Circle given by its center and its radius;
- Image of a figure by axial symmetry, by central symmetry;
- to use and construct tables, diagrams, graphs and to know how to switch from one mode of expression to another;
- to use tools (tables, formulas, drawing tools, calculators, software); to grasp when a situation of everyday life lends itself to mathematical treatment, to analyze it by posing the data then by issuing hypotheses, to engage in reasoning or calculation with a view to its resolution, and, for this:
  - know when and how to use basic operations; check the resemblance of a result;
- recognize situations relating to proportionality and deal with them by choosing an appropriate means;
  - use graphic representations; use plane geometry theorems ; locate oneself in space: use a map, a plan, a diagram, a system of coordinates. Not apparent or unknown;

- to express and exploit the results of a measurement or research and that: use scientific languages in writing and orally; master the main units of measurement and know how to associate them with the corresponding quantities; understand that a measurement is associated with an uncertainty; understand the nature and validity of a statistical result;

- to use techniques and technologies to overcome obstacles . On the aspect relating to attitudes, the study of mathematics allows students to understand the existence of logical laws and develops:

- rigor and precision

*D ' of them are concentrated on 3 sectors of activity which represent only 30% of the labor market: primary, secondary, tertiary.*

Traditionally, a number of studies have shown that girls in primary and lower secondary school do better than boys in languages, while the reverse is true for maths and science. However, more recent results show that these marked gender differences in the early years of schooling tend to decrease as students progress through their schooling.

All these reflections clearly show that educational action is based on the intelligence of the individual and not on whether one is a boy or a girl. This is in line with the results of our work and partly confirms our data on the success rate. boys and girls.

In relation to this observation, we have conducted our study through the following questions:

The main one is whether success in the discipline of mathematics is gender-related?

And the secondaries;

In which specific themes would each tend to perform better?

-Would there be explanatory reasons for success linked to gender?

Any research question is implied by the

hypotheses.

We have therefore formulated the following hypotheses, the main one being:

The results of the quarterly examinations of the boys are higher than those of the girls, the secondary ones follow:

-The results obtained show that both would tend to have the best results in mathematics;

- Teachers regularly assign homework and help all students under the same conditions.

To carry out our reflection, we have set ourselves the following objectives:

-Evaluate the gap that exists between the school performance achieved by boys and girls;

-List the mathematical themes that accentuate this difference;

-Suggest some approaches to solutions to eradicate or at least reduce this gap that would exist in school performance in mathematics between boys and girls

### 1 Methodology

The school district of Ouenzé 1 is subdivided into three pedagogical zones, each supervised by an inspector in charge of pedagogical activities (ICAP) and into nine pedagogical sectors, each led by a principal pedagogical inspector.

The educational zones and sectors are structured as follows:

Areas	Number of schools	Public schools	Schools contracted
Area I	4	- Lheyet Gaboka A and B - Massamba Raphael A and B -Revolution A and B	
Area II	3	-Pierre Ntsiete AandB	Immaculate A and B
Area III	3	-Three Martyrs A and B	Evangelical

*Source: Ouenzé School Inspectorate1*

#### 1.1-Study population

For the sake of a comparative study of school performance in mathematics, boys and girls in classes CM<sub>1</sub>, and CM<sub>2</sub> and the plants in charge of said classes, constitute our population, are

of our survey, we identified 2141 students in CM<sub>1</sub> classes and 1448 students in CM<sub>2</sub> classes . These classes are broken down in the table below.

**Table n°I : Number of pedagogical classes in Ouenzél schools (2019- 2020)**

No.	Educational institutions	Levels and numbers		Total
		CM1	CM2	
1	Three Martyrs A	252	185	437
2	Three Martyrs B	296	191	487
3	Evangelical	57	46	103
4	Immaculate A	94	37	131
5	Immaculate B	96	72	168
6	Pierre Ntsiete A	222	224	446
7	Pierre Ntsiete B	291	166	457
8	Massamba Raph .	243	139	382
9	Revolution	159	80	239
10	Lheyet Gaboka A	183	143	226
11	Lheyet Gaboka B	248	165	413
<b>Total</b>		<b>2141</b>	<b>1448</b>	<b>3589</b>

*Source: School Inspectorate of Ouenzé 1*

**1.2 - Study sample**

Unable to work with all the eleven schools of the district, we chose to work with four schools and in

these schools, we take into account all the classes of C.M1 and CM<sub>2</sub> as well as the teachers of these classes.

**Table n°II : Size of the study sample**

Classes Schools	Teachers			Students		
	H	F	T	G	F	T
Evangelical	2	0	2	53	50	107
Immaculate A	3	1	4	51	80	131
Pierre Ntsiete B	0	4	3	3	208	238
Massamba Raph	0	6	5	186	196	382
Total	5	11	16	498	564	1062

*Source: Inspection back-to-school report*

In these classes, the students who will be part of the study are those who, during the first trimester, have not been absent more than ten times. The exclusion variable is more than ten absences. The

numbers of the most assiduous students listed in the classes allowed us to establish the tableau vivant:

**Table n°III : Population of pupils by school**

Classes Schools	Classes												Total	
	CM1 A1			CM1 A2			CM2 A1			CM2 A2				
	G	F	T	G	F	T	G	F	T	G	F	T		
Evangelical	25	29	54				2							101
Immaculate A	23	22	45	21	2	41	1				18	16	34	153
Pierre Ntsiete B	16	18	34	14	1	31	3		56		28	34	62	183
Massamba Raph.A	10	17	27	15	1	33	2							107
Massamba Raph.B	16	19	35	16	2	36					25	22	47	118
Total	90	105	195		7	141	8			183	71	72	143	662

*Source: compiled by the researcher.*

The total number of our sample is six hundred and sixty (662) learners. The teachers selected are those who hold these C.M1 and CM<sub>2</sub> classes, i.e. sixteen (16) teachers.

### **1.2.3. Data collection instruments, rationale and conduct of the survey.**

#### **1.2.3 1- Documentary analysis**

Documentary analysis is the processing of the document. It is used to describe and characterize the content of a document. This is to answer the question what is this document about?

This technique allows us to identify in teachers' notebooks, transcripts, learners' workbooks and homework, indices of learners' academic performance

#### **1 2.3.2 - Observing**

Observation is the action of considering with attention, with reflection an object or a fact, to have a clear and precise knowledge of it. All scientific observation starts from a determined reference system and is selective. Its goal is to detect, to discover the visible external behavior: to observe the gestures, the movements, the language, the attitudes of the teacher vis-a-vis the learners. In our case, the observation will focus on the practice of the class, on the programmed mathematics themes. An observation grid was developed based on five areas of interest.

#### **1.2.3.1– Maintenance**

The interview survey is aimed at a smaller number of people than a questionnaire survey and the relational dimension is more present.

The interview takes the form of a conversation more or less directed by the interviewer, bearing on the object of study.

From an interview guide drawn up by center of interest, we carried out an interview with the teachers of C.M1 and CM<sub>2</sub> , in order to collect explanations on the causes of the difference

observed in the school performance of the boys and girls in mathematics. The centers of interest of the grid are as follows:

1. Mathematics and curriculum
2. Mathematics didactics
3. Student achievement in mathematics
4. Outlook
5. Encountered difficulties

## **2. Results**

### **2.1-Results from the documentary analysis**

In CM<sub>1</sub>, the boys achieved a score of 284 or an average of 9.46 in written calculation against 315 achieved by the girls or an average of 9.00. The gap is 0.46 in favor of boys.

In quick calculation, the girls achieved 280 points, an average of 8.00 against 222, an average of 7.4, achieved by the boys, with a difference of 0.60, in favor of the girls.

In CM<sub>2</sub> , the boys achieved a score of 409, that is an average of 7.71 against 367 points achieved by the girls, that is an average of 7.19 in written calculation, with a difference of 0.5 in favor of the boys.

In rapid calculation, the girls achieved a score of 374, an average of 7.19 against 360 achieved by the boys, an average of 6.54, with a difference of 0.65 in favor of the girls.

### **Summary of first trimester academic performance**

The summary of school performance for the first trimester shows that: in CM<sub>1</sub>, boys achieved a score of 2456, i.e. an average of 16.37 against 2830 achieved for girls, i.e. an average of 16.17, with a difference of 0.20 , advantage of the boys, in CM<sub>2</sub>, the boys achieved a score of 2256.5 or an average of 15.14 against 2429.76 or an average of 14.63, with a difference of 0.5, in favor of the boys.

**Table n°IV : Summary of school results for the second term**

School	Levels										
	CM1						CM2				
	Workforc	Calcul	Score	Calcul	Score	Del	Calcul	Score	Calcul	Score	
Massamba RA	G	25	226	9.04	154	6.16	20	220	11	146	7.3
	F	35	209	5.97	159	4.54	28	326	12.07	233	8.62
Massamba RB	G	32	137	4.28	157	4.90	25	174	6.96	180	7.2
	F	39	155	3.97	191	4.89	22	120	5.45	142	6.45
prayer Ntsite A	G	30	284	9.46	222	7.4	58	409	7.05	360	6.28
	F	35	315	9	280	8	60	367	6.11	374	6.23
Immaculate A	G	44	271	6.15	198	4.5	34	342	10.05	142	4.17
	F	42	331	7.88	193	4.59	33	514.5	15.59	201	6.09
Evangelical	G	25	164	6.56	135	5.4	22	65	2.95	68	3.09
	F	29	253	8.72	136	4.68	25	94	3.76	64	2.56
Totals	G	15	1082	6.93	866	5.55	15	1210	7.61	896	5.63
	F	18	1263	7.01	959	5.32	16	1421.5	8.51	1014	6.07

Source: Elaborated by the researcher

The summary table of school performance for the second quarter reveals: in CM1, the boys achieved a score of 1082, i.e. an average of 6.93 against 1,263 achieved by the girls, i.e. an average of 7.01 in written calculation with a difference of 0.08 in favor of girls.

In quick calculation, the boys achieved a score of

866, an average of 5.55 against 959 achieved by the girls, an average of 5.32 with a difference of 0.23 in favor of the boys.

In CM<sub>2</sub>, the girls achieved a score of 1421.5, an average of 8.51 against 1,210 achieved by the boys, an average of 7.61. The gap between boys and girls is 1.34 in favor of girls.

**Table n°V : Number of admissions for the second quarter**

Schools	C.M1						CM <sub>2</sub>					
	Del	Written calculation		Quick calculation		Del	Written calculation		Quick calculation			
		Admitte	%	Admitt	%		Admitte	%	Admitte	%		
Massamba RA	G	25	11	44	22	88	20	13	65	18	90	
	F	35	06	17.14	17	48.57	27	15	53.57	28	100	
Massamba RB	G	32	04	12.5	19	59.37	25	04	16	23	92	
	F	39	03	7.69	25	64.10	20	06	27.27	18	81.81	
prayer Ntsite A	G	24	15	50	28	93.33	58	24	41.37	53	91.37	
	F	30	15	42.85	31	88.57	60	3rd	60	47	78.33	
Immaculate A	G	44	06	13.63	11	25	24	22	64.70	20	58.82	
	F	42	11	26.19	19	45.23	34	32	96.96	23	69.96	
Evangelical	G	25	04	16	16	64	75	02	09.09	03	13.63	
	F	29	14	48.27	12	41.37	73	02	08	06	24	
Totals	G	150	40	25.64	96	61.53	142	65	40.88	117	73.58	
	F	175	49	27.22	104	57.77	166	91	54.49	122	73.05	

Source: Elaborated by the researcher



Reading the table of admitted students for the second quarter in written calculation reveals that in CM<sub>1</sub>, 49 girls are declared admitted, with a percentage of 27.22 against 40 boys, that is a percentage of 25.64.

The work done by girls is slightly higher than that of boys with a difference of 1.58.

In quick calculation, 96 boys are declared admitted, a percentage of 61.53 against 104 girls, a percentage of 57.77.

The work of boys is slightly higher than that of girls with a difference of 3.76.

In CM<sub>2</sub>, in written calculation, 91 girls are declared admitted with a percentage of 54.49 against 65 boys with a percentage of 40.88.

The work of girls is higher than that of boys, a difference of 13.61.

In quick calculation 117 boys are declared admitted with a percentage of 73.58 against 122 girls, that is a percentage of 73.05.

The work of boys is slightly higher than that of girls with a difference of 0.5

### **3.2.1- Documentary analysis**

In view of the foregoing, the documentary analysis reveals that:

In C.M1 the girls present the best results in numeration, measurement and geometry (49, 49% and 27.27%) compared to those who achieved 45.51% and 25.64%. In rapid calculation, boys have the best results (75% and 61.53%)

In C.M2, girls show the best results in numeration, measurement and geometry (55.08% and 54.49%) compared to boys who achieved the percentages of 52.20 and 40.48.

In fast calculation, boys have the best performance (72.32% and 73.05%) compared to the percentages achieved by girls (72.45% and 73.05).

Ultimately, the girls work better than the boys in written arithmetic, on the other hand in fast

arithmetic the boys work better than the girls.

### **3.2.2- Results from observation**

This phase of our survey shows that teachers experience some difficulties in the preparation and realization of some themes of the discipline of mathematics in CM such as: geometry with the construction of figures then in numeration.

#### **- Formulation of objectives**

One teacher, ie 12.5%, has difficulties in formulating objectives.

#### **- Lesson preparation**

This phase presents many indicators that promote a good understanding of mathematics in C.M1. All teachers prepare for teaching, 87.5% of teachers follow the didactic approach.

#### **- Carrying out the lesson**

This step presents some indicators that promote good learning.

Concerning the expression of the teacher, 87.5% have an expression adapted to the class then 62.5% have mastery of the concept taught against 37.5.

### **4 – Results from the Interview**

This data collection technique had four (4) centers of interest: mathematics and the school curriculum, teaching materials and learning outcomes, learner results in mathematics and finally the difficulties experienced by the teacher.

For mathematics and the school program, 75% of teachers ask all the scheduled sessions during the week, 100% of teachers have difficulties either in numeration or in geometry or in measurement.

The time provided for the completion of a mathematics session seems insufficient to all teachers.

All the teachers take part in the seminars organized by the hierarchy, 87.5 are regularly followed by the supervisors.

Concerning the use of didactic material, 50% affirm the sufficient presence of didactic material

in their school, 75% use the didactic material, 87.5% say that the insufficiency of the didactic material does not paralyze acquisition among the learners.

Concerning the difficulties experienced by the teachers, 87.5% have difficulties in the development of the mathematics sheet.

**4.1-Interpretation of results**

After analyzing the results of the survey on the school performance of boys and girls in

mathematics in CM, we want to provide some attempts at interpretation.

With regard to the conclusions of the analysis, we are going to verify each of the questions which constituted our indices of investigation.

In rapid calculation, in CM<sub>2</sub> for boys and girls, the marks revolve around the calculated average. The t-value = 0.6. T being less than  $t_{\alpha}$ , the difference between  $\bar{X}_1$  and  $\bar{X}_2$  is not significant.

Period	Gender	Levels			
		CM <sup>1</sup>		CM <sup>2</sup>	
		Written	Quick	Written	Quick calculation
Second trimester	Boys	4.23	3.18	5.13	2.62
	Girls	0.53	2.33	5.46	2.90

*Source: compiled by the researcher*

**Table n°VI : Comparison of differences in the second trimester in written arithmetic and rapid arithmetic at CM, between girls and boys**

Reading this table reveals that:

- In C.M1, the girls achieved a lower standard

**Table n°VII : Comparison of the standard deviations of the two trimesters in written calculation and rapid calculation in CM, between girls and boys**

deviation (0.53) than that of the boys. From where we say that the results of the girls are superior to those of the boys.

- Similarly, in rapid arithmetic, girls have higher results than boys.

results of the girls are superior to those of the boys in CM<sup>1</sup>, over the two periods concerned.

- in rapid calculation, the girls also achieved lower standard deviations (2.06; 2.33) than those of the boys (2.90; 3). Similarly, we find that girls

Period	Gender	Levels			
		CM <sup>1</sup>		CM <sup>2</sup>	
		Written	Quick	Written calculation	Quick calculation
First trimester jL	Boys	5.65	2.90	6.10	2.34
	Girls	5.22	2.06		2.35
Second trimester	Boys	4.23	3.18	5.13	2.62
	Girls	0.53	2.33	5.46	2.90

*Source: compiled by the researcher*

This table reveals that:

- in written calculation, the girls achieved lower standard deviations (5.22; 0.53) than those of the boys (5.65; 4.23). From where we say that the

perform better than boys in both periods.

All in all, we find that the standard deviations achieved by girls are lower than those of boys. From this, we can conclude that the grades of the girls are closer to the average.

2- What are the mathematics themes that accentuate the difference in school performance between girls and boys in CM if there is a difference?

To answer this question, we used three instruments: documentary analysis, observation and interview.

The analysis of the results reveals that the girls are superior to the boys in written arithmetic and the boys are superior in fast arithmetic.

In rapid calculation, in CM1 and CM 2 the results of boys (75% and 6.5%); (72.32% and 73.53%) are higher than those of girls (70.55% and 57.77% ); (72.45 % and 73.05%). By also analyzing the standard deviations, we find that the standard deviations for boys are lower than those achieved by girls. This shows sufficiently that the marks achieved by the boys are closer to the average.

At the observation level, girls are more active and answer questions better than boys with a percentage of 87.5%.

With regard to the interview, all the teachers, ie 100%, confirmed that the girls work better than the boys except in rapid calculation where. A few are weak.

Would there be any explanatory reasons for this difference in school performance achieved by girls and boys in CM?

The gap that exists in academic performance in mathematics between boys and girls in CM is explained by the fact that girls are calmer and more aware during the teaching/learning act. They are also more motivated. These results can also be explained with the awareness of parents who have understood the merits of a girl's success in the family and in society since many of them have been sent to school.

## 5. Discussion

Studies conducted in the United States, Bensow and Stanley (1980); Meece and AL (1982) with 13-year-old pupils in order to verify the differences in

school performance between girls and boys in mathematics, indicate that boys are more likely to obtain better grades.

This study does not confirm our data on the success rate of boys and girls.

In the past, and today in rural areas, if boys have better grades than girls, this is because of the affection for domestic chores or their mobilization as family helpers for their mothers, as they grow up. , reduced the time they could devote to studies. The situation seems more pronounced in the countryside (the work of Caron and Chau 1998).

According to a recent report, in France where the majority of children go to nursery school from the age of 3, girls do better than boys at all levels. These data confirm those of our survey because the results of our surveys show that girls have done better than boys in mathematics.

In the Dominican Republic and Honduras, cited by student Onkene , girls do better than boys in math. These data more or less confirm those of our survey.

The relationship between academic success and the sex of the learner has been addressed in the majority of studies which tend to seek the explanatory elements of academic success or failure Bastide, (1992); Veillet and Al, (1993).

Bastide (1992), in a study carried out in France with immigrant children, revealed that the academic success of girls is, on the whole, a little higher than that of boys, 40% against 26%. Veillete and Al (1993), in a survey carried out in Quebec, show that girls are proportionally more likely than boys to obtain a secondary school diploma and to access college.

These data confirm the results of our investigations. According to Emmedit (1997), the reasons which explain the better academic success of girls reside in the fact that they are more motivated and have a greater desire to learn.

They work harder to ensure their academic

success, unlike boys who devote more time to extracurricular activities.

CONFEMEN's education systems analysis program (PASEC) organized the first international assessment in 2014 in ten African countries, including Congo.

In all the ten countries assessed, almost 50% of pupils did not reach the “ sufficient threshold of proficiency in mathematics on the proficiency scale.

## **6. Suggestions**

After analyzing the results of our survey, it is important for us to formulate some suggestions for parents, teachers, supervisors and learners in order to make improvements in the academic performance of learners in mathematics in CM.

### **To parents**

- Set up a liaison book in order to control the attendance of children.
- Check children's notebooks daily to help them with homework
- Better control of their children's schooling by establishing family-school relationships
- In the school setting, girls and boys should be considered on an equal footing. It is a question of investing as much for one as for the other.

### **To teachers**

- Make use of the didactic material, the guide and the student's book in order to arouse the attention and the understanding of the learners.
- Consider learners at the same level without having particular sympathy for a genre.

## **Conclusion**

Our research study focused on the comparison of the school performance of boys and girls in mathematics in CM, in the school conscription of Ouénzé I in Brazzaville. The aim was to highlight the gap that exists in school performance in mathematics between boys and girls. This study led us to discover the

mathematical themes that accentuate this difference. In this study, we pursue the following objectives:

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To carry out this study, we relied on documentary analysis, observation and interview.

The results obtained allowed us to identify the difference between the academic performance of boys and girls in mathematics at CM

The documentary analysis through statements and report cards show that the girls showed better performance in written calculation in CM1: 50.85% and 27.22 % in CM 2 : 55.42% and 54.49% compared to to boys who have achieved: 47.33% and 25.64 at C.M1; 58.45 % and 40.88%. The demonstration based on the standard deviations shows that the grades achieved by the girls are closer to the average. The themes that accentuate this difference are numeration, geometry and measurement through written calculation.

The observation of learners and teachers from the observation grid revealed that: all the teachers are 100% evaluate the learners at the end of each session, 87.05% of the girls are more active than the boys and respond better to questions posed by teachers. The interview with the teachers, from the interview grid, revealed to us that all the teachers have difficulties in the development of the educational file either in numeration, or in measure, or geometry.

Ultimately, our study aimed to show whether school results in mathematics are linked to gender. However, taking into account the small difference in the success rate between boys and girls, we could not allow ourselves to say that educational action is based on the fact that one is a boy or a girl. But rather that the instruction of the young girl must be done under the same conditions as those of the boys. Parents must encourage girls to go to school to stay there for a long time until they succeed, become managers. We would like to point out that we do not claim to have covered the

entire theme of the comparison of school performance in mathematics. There are so many parameters to consider. In this, we invite in the future, other researchers to be able to deepen this question. However, we can say that girls today are more motivated, attentive and more aware than boys at primary school level. As educators, it is up to us to encourage these progressive attitudes of girls when we know that young girls are very busy with domestic tasks and that the extracurricular help expected is not often present.

### References :

1. ADEA, 2009. *Dialogue on Education for Leadership and Change*
2. Anonymous, 2015, The Sustainable Development Goals
3. ARNOLD Gesell, 2010 , Volume I *the child* Paris PUF
4. World Bank, 2003. *Gender and economic development*. Editions Saint-Martin Montreal ( Quebec ) p. 31
5. CONFEMEN .2009: *document of the diversification of the offer of basic education reflection and orientation* Kinshasa .
6. INRAP 2013 Teaching programs in primary school INRAP Brazzaville
7. FAWE Newsletter 2011 *Education and Equality* Vol 001.N.1
8. NDOUDI P. 2016, The results of the PASEC 2014 international assessment, Performance of education systems in sub-Saharan Africa
9. PASEC 2014 *Performance of education systems in French-speaking sub-Saharan Africa; Elementary skills and success factors*
10. TANKE Z. et al 2009, Primary education in Congo in search of equity
11. UNESCO, 2005. *Report on combating discrimination in education*

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