**Problem of elaboration of the forecasts of the subjects of the course of Mathematics in the secondary schools: Case of the teachers of the classes of third and fourth secondary.**

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**ABSTRACT**

This research follows an observation: the teachers of the secondary school mathematics course, particularly those of the third and fourth year classes of Quartier Gambela II, do not develop subject forecasts. However, the circular note n ° DEPS/CCE/001/84/00764/85 of March 27, 1985 specifies that the forecast of the subjects is an essential educational document, an important guide of the work which helps the teacher not to complete his course very quickly or not rush his teaching at the end of the school year to complete the program.

The purpose of this study is to explain the difficulties of developing subject forecasts by the teachers concerned. Thus, it emerges from our investigation in the field that the following factors are the basis of the observation that we have made:

* The lack of very extensive didactic materials (the national program, the textbooks approved and in accordance with the program, the school calendar and the civil calendar)
* The very broad content-subject of mathematics 3 and 4
* The insufficient weekly schedule, i.e. hours per week
* And the lack of theoretical concepts for calculating the numbers of working days, potential course days and actual course hours corresponding to the total number of lessons to be given throughout the school year.

**Keywords** :Forecasting, Mathematics , Teachers

**INTRODUCTION**

Today, education is recognized as a key issue in the development of a nation. On this, LETHAN KHOI quoted by Prof Jean jacques Kalumba in his course of educational communication technique intended for doctoral students in school management, underlines that education is always like a human right, the source of its moral and intellectual development, the instrument of its social elevation, the condition of political democracy.

National opinion in the Democratic Republic of Congo is currently denouncing the decline in the quality of education for several decades after the country gained independence.

The education of young people, the spearhead of a country's development, is proving to be an arduous task that requires unlimited dedication, materialized in particular by the meticulous keeping of educational documents by teachers.

It is in this context that the circular, No. DEPS /CCE/001/84/00764/85 of March 27, 1985, insists on the compulsory keeping of educational documents by teachers and specifies that the forecast of subjects is a work guide. which helps the secondary school teacher not to rush his teaching at the end of the year to complete the program.

Thus, the forecast of the subjects determines what one logically transmits to the learners as scientific knowledge to endow with a required intellectual baggage by referring to the national program of teaching.

With the correct development of the subject forecast, the teacher is spared trial and error, hesitation and unpleasant surprises during the school year.

However, we realized that the teachers of the mathematics course of the third and fourth year secondary schools of Gambela II where I am a prefect for more than six years do not draw up the forecasts for the subjects.

In this regard, we are asking the following fundamental question: why the teachers of mathematics courses in the schools of our study environment, particularly those of the third and fourth secondary classes, do not develop subject forecasts?

Anxious to detect the causes of this situation, we tried to verify the hypothesis according to which the history teachers of the 3rd and 4th year secondary classes

experience difficulties in preparing teachers' forecasts. These difficulties can be explained by:

* Lack of teaching materials such as the national curriculum, textbooks approved and in line with the national curriculum, and calendar calendars
* Very extensive subject content
* The insufficient weekly timetable, i.e. two hours per week
* The lack of theoretical notions on the calculation of the number of working days, potential course days and actual course hours corresponding to the total number of lessons to be given throughout the school year.

Through this study, we set ourselves the objectives of detecting the causes of the lack of elaboration of the forecasts of the subjects by the teachers of the history course of the secondary schools of Isangi -center and its surroundings, particularly those of the third classes. and fourth year and propose the appropriate therapies.

After the presentation of the methodological framework, the causes of the lack of elaboration of the forecasts of the subjects will be raised in a second time before discussing the results in the light of the educational literature.

1. **Methodological Framework**

At this level, it is a question of presenting our sample and describing the method and techniques we used.

* 1. **Sampling**

The study population includes all the teachers of the mathematics course of the third and fourth year secondary classes of Gambela II

Within the framework of our work, we made use of the simple sample, we constituted it by randomly selecting twenty subjects.

The following table shows the number of teachers by school and by management regime.

**Table 01. Number of teachers by school and management regime**

|  |  |  |  |
| --- | --- | --- | --- |
| NOT | DENOMINATION | EFFECTIVE | MANAGEMENT REGIME |
| 1.  | THAT'S IT | 2 | Private |
| 2.  | CS B | 2 | Private |
| 3.  | CS C | 2 | Private |
| 4.  | CS D | 2 | Private |
| 5.  | CS E | 2 | Private |
| 6.  | CS F | 2 | Private |
| 7.  | CS G | 2 | Private |
| 8.  | CS H | 2 | Private |
| 9.  | CSJ | 2 | Private |
| 10.  | CSK | 2 | Private |
| TOTAL | 20 |   |

Source: my personal research:

* 1. **Research method and technique**

In order to verify our hypothesis, we resorted to the systemic analysis of the observation of the forecasts of the subjects by the teachers of the mathematics course, taking into account the importance of this pedagogical document in the context of the teaching of this subject. discipline in secondary schools in the Democratic Republic of Congo, our country.

In the introductory part of our study, we evoked the factors relating to the lack of elaboration of the forecasts of the subjects by the teachers of mathematics of Gambela II.

Data collection was facilitated by the technique of the questionnaire, said questionnaire of the alternative type was composed of 9 questions, each of which had a relationship with one of the variables retained in this study.

Finally, data processing was facilitated by the method of content analysis.

**1.2.1. Lack of teaching aids**

In this variable, we retained: the national program, the textbooks approved and in conformity with the national program, the school calendar and the civil calendars

In relation to the national program, we asked the following question:

Question n 0 1: "The school management has provided you with the national program for the mathematics course "?

The opinions of our subjects are summarized in the table below:

**Table 2: National program**

|  |  |  |
| --- | --- | --- |
| Category of answers | Response frequencies | Percentage |
| Yes | 12 | 60 |
| Nope | 08 | 40 |
| Total | 20 | 100 |

According to this table, 60% of survey subjects have the national mathematics program. It does not constitute an obstacle to the elaboration of material forecasts.

Concerning the textbooks approved and in conformity with the national program, the following question was addressed to our subjects:

Question 2: "Do you have approved textbooks of mathematics of 3 and 4 and in conformity with the national program"?

The responses of our subjects are summarized in the following table:

**Table no . 3: Approved manual in accordance with the National Program**

|  |  |  |
| --- | --- | --- |
| Category of answers | Response frequencies | Percentage |
| Yes | 04 | 20 |
| Nope | 16 | 80 |
| Total | 20 | 100 |

According to this table, 80% of the subjects questioned do not have approved textbooks that comply with the national curriculum. One of the difficulties in developing material forecasts.

As for the school calendar, our subjects answered the following question:

Question no. 3: "Do you consult the school calendar for the development of

Forecast of materials"?

The table below gives an overview of the responses of our subjects:

 **Table 4 : Consultation of the school calendar**

|  |  |  |
| --- | --- | --- |
| Category of answers | Response frequencies | Percentage |
| Yes | 06 | 30 |
| Nope | 14 | 70 |
| Total | 20 | 100 |

From the analysis of this table, 70% of the subjects questioned do not consult the school calendar for the work of developing subject forecasts. Another difficulty in updating material forecasts.

With respect to the calendar calendars of consecutive calendar years, we ask the following question:

Question n ° 4: "Do you consult the civil calendars to work out your forecasts of the matters"?

The responses of the subjects surveyed are summarized in the table below:

**Table 5 : Consultation of the school calendar**

|  |  |  |
| --- | --- | --- |
| Category of responses | Response frequencies | Percentage |
| Yes | 04 | 20 |
| Nope | 16 | 80 |
| Total | 20 | 100 |

From the use of this table of data contained in this table, 80% of the subjects questioned do not consult the civil calendars to draw up their forecasts of materials.

**1.2.2. Content-subject of mathematics course third and fourth year secondary Table no . 6: Content-subject of mathematics course 3 and 4**

|  |  |  |
| --- | --- | --- |
| Category of responses | Response frequencies | Percentage |
| Yes | 18 | 80 |
| Nope | 04 | 20 |
| Total | 20 | 100 |

According to this table, 80% of the subjects surveyed confirm that the content-subject of history 3 and 4 is vast. This does not facilitate the task of developing material forecasts.

**1.3.4. Weekly timetable for the 3 rd and**

**4th \_**

We posed the following question to our subjects:

Question N o 6: "Is the weekly timetable for Mathematics 3 and 4 of three hours per week sufficient"?

The reaction of the subjects surveyed is summarized in the table below:

**Table 07 : Sufficient weekly timetable**

|  |  |  |
| --- | --- | --- |
| Category of responses | Response frequencies | Percentage |
| Yes | 02 | 10 |
| Nope | 18 | 90 |
| Total | 20 | 100 |

According to this table, 90% of the subjects questioned believe that the weekly schedule of the mathematics course 3 and 4 of three hours per week is insufficient and does not allow them to complete the program.

**1.2.4. Lack of theoretical notions of calculation**

In this variable, we used the calculation of: number of working days, number of potential course days and number of actual course hours.

In relation to working days, our surveys answered the following question:

Question no . 08 : "Do you calculate the number of potential course days, to work out your subject forecasts"?

 **Table 08 : calculation of the number of working days**

|  |  |  |
| --- | --- | --- |
| Category of responses | Response frequencies | Percentage |
| Yes | 00 | 00 |
| Nope | 20 | 100 |
| Total | 20 | 100 |

As in Table 8, this table confirms that our surveys do not calculate this number of potential courses of courses, i.e. 100% of the subjects questioned.

Question 8: "Do you calculate the number of potential course days to develop your subject forecasts"?

The following table summarizes the reaction of our subjects

**Table 09 : calculation of the number of potential course days**

|  |  |  |
| --- | --- | --- |
| Category of answers | Response frequencies | Percentage |
| Yes | 00 | 00 |
| Nope | 20 | 100 |
| Total | 20 | 100 |

As in Table 8, this table confirms that our surveys do not calculate this number of potential courses of courses, i.e. 100% of the subjects questioned.

In relation to the number of actual course hours corresponding to the total program of lessons given throughout the school year, the following question was asked of our subjects:

Question no . 09 : "Do you calculate the total number of actual course hours to work out the subject forecasts"?

The following table summarizes the responses or opinions of our subjects

**Table 10 : calculation of the total number of course hours corresponding to the total number of lessons**

|  |  |  |
| --- | --- | --- |
| Category of answers | Response frequencies | Percentage |
| Yes | 00 | 00 |
| Nope | 20 | 100 |
| Total | 20 | 100 |

From this table, we note that 100% of survey subjects do not calculate the total number of actual course hours. This constitutes a major difficulty for the elaboration of material forecasts.

1. **Results analysis**

**2.1. Result in relation to the lack of didactic materials**

1. **Textbooks approved and in accordance with the national program**

Through this study, we demonstrated that approved textbooks of mathematics

are rare in our secondary schools. This situation is explained by the fact that our schools are located in areas where book markets, libraries or teachers can find resources. This is the reason why F. Caillods and T. Neville POSTLETHWAITE [[1]](#footnote-1)state that whatever the skills of the teachers, they will remain of limited effect if the conditions are not met.

1. **School calendar and civil calendars**

Lonji , M. et all [[2]](#footnote-2)affirm that the school calendar is a work instrument which gives information on the subdivision of the school year into weeks, months, period, semester, vacations, leisure leave, legal holidays, the periods of the examinations of the juries, the end of cycle tests and the working days.

In the education system in DR Congo, it is the school authorities at all levels who have the obligation to make this work tool available to teachers. This is unfortunately not the case according to the surveys we have just carried out as part of this reflection.

The same is true of civil calendars.

Teachers are placed under the direct authority of their headteachers. It is up to the latter to do everything possible to provide their collaborators with these precious didactic materials, as confirmed by Caillots, F and Neville, P [[3]](#footnote-3).

**2.2. Result in relation to the content-subject of the mathematics course 3 and 4**

This study demonstrated that the content-subject of the course of mathematics 3 and 4 is

 vast . Matukula , explains this situation by the fact that Mathematics 3 subjects range from origins with a total of over forty-five lessons for the entire school year, while Mathematics 4 with a total of over forty-four lessons.

For our part, this is indeed a problem for a teacher regardless of his qualification and especially in places where he does not have enough books as in our study environment **at** Gambela II.

3.3. **Result compared to the weekly timetable**

The present study has just confirmed the fact that the two hours allocated to history teaching per week are not enough to complete the program and achieve the objectives assigned **to** this school subject.

This situation is the result of the secondary education reform of June 19

1981 which abolished Ordinance-Law No. O 67-250 of June 05, 1967 on the organization of cycles

secondary education which, in its section II, article 5, allocated four to five hours of teaching per week to the mathematics course in the classes of 3 rd , 4 th , 5 th and 6 th secondary years.

3.4. **Result in relation to the lack of theoretical notions of calculation**

**has. Calculation of working days**

Working days concern all working days. On this, the teacher must refer to the calendar and the civil calendars of two consecutive years to work out his forecasts of the subjects. However, our teachers do not have these didactic materials.

Beyond this aspect, our teachers have no idea of the cryptogram of a calendar year which makes it possible to determine the number of Mondays, Tuesdays, Wednesdays, Thursdays, Fridays and Saturdays in order to retain only the working days during the development of material forecasts.

To determine the number of working days, all Sundays, days off for relaxation, vacations and legal holidays must be counted.

All these operations constitute serious difficulties on the part of teachers.

**b. Calculation of potential course days**

Potential lesson days are, according to Lonji , M. et al. [[4]](#footnote-4), days on which new lessons occur.

To determine them, it is necessary to count:

* + Refresher days: the first week of classes: from 02 to 07 September, i.e. 06 days.
	+ Revision days of the first week: from January 30 to February 05: 06 days
	+ The first semester exam period: from 06 to 13 February **, i.e.** 07 days
	+ Revision days for the second semester: from May 27 to June 02: 06 days
	+ The days of the second semester exams until the end of the school year: from June 03 until the end, i.e. 25 days.

In light of the above, we have a total of 50 days to count.

To facilitate the calculation of the number of potential course days, the following formula should be used:

JP = JO – JD Legend:

PD = Potential Days

BD = Working days

JD = Counted Days

Ex: 222 days – 50 days = 172 days.

**C. Calculation of actual course hours (HR)**

To determine the number of actual course hours, we proceed as follows:

* We first determine the total number of course hours (HT),
* Then determine the number of hoursto count down, i.e. the hours of circumstances and unforeseeable (HD)

The formula below is used to calculate the number of actual course hours: HR = HT – HD

In relation to this variable, F. Caillods and T. Neville Postlethwaite 9 argue that teachers should have a high general level of education and that those employed in secondary schools should have a thorough knowledge of the way they teach. . But unfortunately, underline the same authors, 10 the situation of secondary education has deteriorated in certain countries where the **accelerated** programs of development have led the managers of private schools to recruit many teachers who have not received any pedagogical training and whose the level of education was insufficient.

**Conclusion**

In this study on the elaboration of the forecasts of the subjects of the course of mathematics in the classes of third and fourth years of the secondary schools of Gambela II, we started from the report according to which the teachers do not work out the forecasts of the subjects.

In this regard, we are concerned to know why the teachers of mathematics 3 and 4 in our study environment do not develop subject forecasts.

To carry out this study well, we formulated the hypothesis according to which the mathematics teachers of the third **and** fourth year secondary classes in Gambela would experience difficulties in developing subject forecasts. These difficulties can be explained by:

* The lack of didactic materials (national program, textbooks approved and in accordance with the national program, the school calendar as well as the civil calendars of the last two consecutive years **),**
* Very extensive subject content
* The insufficient weekly timetable,
	+ The lack of theoretical notions on the calculation of the number of working days, potential course days and the actual hours of lessons to be given throughout the year.

We set ourselvesas objectives:

* + Identify the causes of the lack of preparation of material forecasts
	+ Seek appropriate therapies to remedy this situation

The population of our study environment includes all the teachers of mathematics courses in the third and fourth year secondary classes of our schools. While our sample consisted of 20subjects who represented all the teachers in our study population. We usedthe survey questionnaire as a research technique. Said questionnaire had 9 questions **with** alternative answers related to each of the indicators retained in this study.

Finally, we made use of content analysis to present and analyze the results obtained: which made it easier for us to discuss them.

By way of results, we can retain the following:

* + With regard to the lack of didactic materials: national program, textbooks approved and in conformity with the national program, the school calendar as well as the civil calendars are cited as reasons for the non-elaboration of subject forecasts by the teachers of our schools,
	+ Concerning the content-subject of mathematics courses, this indicator is cited as the reason for the lack of elaboration of forecasts of subjects because of its very vast scope in the national program,
	+ The weekly schedule of three hours per week is recognized as a factor that does not facilitate the preparation of subject forecasts,
	+ Finally, as to the theoretical notions on the calculation of the number of working days, potential days of lessons and the actual hours which correspond to the total number of lessons to be given throughout the school year

Before closing, we remind you that improving the quality of mathematics education in our secondary schools depends on the efforts of everyone: heads of establishments, teachers, managers, inspectors, etc.

May the results of this study inspire each other in the search for solutions to the problems posed by the lack of preparation of subject forecasts in our schools.

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