

## Original Research Article

# **PROPOSAL FOR AN EVALUATION MODEL CENTERED ON A STRONG INTERDISCIPLINARY APPROACH IN CBA (Competence-Based Approach): CASE OF SECONDARY SCHOOL IN THE FRANCOPHONE SUB-SECTION IN CAMEROON**

**Comment [A1]:** The number of pages in this article is too many....if possible can be summarized again

## **ABSTRACT**

It was a question in this work of scrutinizing school life in Cameroon in order to propose an evaluation model centered on an interdisciplinary approach. To do this, the work was carried out on the field and in the laboratory. Many results were collected. Secondary education in Cameroon has six areas of learning. These are the domain of languages and literature, the domain of Science and Technology, the domain of Human Sciences, the domain of personal development, the domain of Arts and national culture, and the domain of Cinema Arts. A distinction is made between the subjects of the first group, the subjects of the second group, and the subjects of the third group. The application to all Pedagogical Departments of the thematic evaluation seems a little difficult because of the orientation of their specific contents. The Pedagogical Departments that can be brought together are: SVTEEB (life and earth sciences, environmental education, hygiene and biotechnology), PCT (physics, chemistry, technology), French, EVA (Religion), Mathematics, English, Geography, IT, LVII (modern languages II). In Cameroon, the number of evaluations per term is set at two. But in confessional secondary schools, there are three and more rarely four. The system of evaluation highlights the autarky existing between the different Pedagogical Departments. Many disciplines are experienced by many learners as a torture. In the specificity of scientific series indeed, language topics in general are completely shunned; the same reality is experienced in the literary series with regard to scientific subjects. The reframing of the harmonized assessment aims to create complementarity between the tests in Cameroon. This is the guarantee of the establishment of a "mirror" thanks to which learners will now see hidden behind certain subjects, others. This vision can also be designated under the following expression: interdisciplinary approach, or globalizing approach, or thematic approach, or complementary approach. The success of such a challenge requires the prior creation of themes to guide the evaluations. To make the interdisciplinary approach a reality in Cameroon, it is necessary to reconsider the different programs by Pedagogical Department and by level of study, with the aim of reconstructing them around issues overlapping the different Pedagogical Departments.

Key words: CBA, interdisciplinary, evaluation, autarky, torture, shun

## INTRODUCTION

Since the advent of the so-called European school in Cameroon, the education system has been changing [1]. This is how we have regularly moved from the NAP (New Pedagogical Approach) to the approach by objective, then recently to the CBA (Competence-Based Approach) [2]. In response to this, the emphasis is increasingly placed on the need to develop a type of assessment capable of inducing over the trials, the learner's ability to adapt to the permanent upheavals imposed by the advent of the concept of global village [3]. However, it is very often noted that the competence-based approach does not really seem to achieve the purpose assigned to it at the time of its implementation in the educational environment in Cameroon. Indeed, we can frequently notice around us the difficulties with which learners try to make the link between the sets of knowledge received and their daily lives. Moreover, when the time comes to bring together knowledge from various backgrounds to try to solve a problem in an unwavering intellectual gymnastics, the blockage is total [4]. This break can easily be justified by the poor perception of the concept of interdisciplinary by learners despite the permanent reminding made by teachers about. At this level, sensible people can already conclude that the situation has gotten poorer [5]; this position of theirs is motivated by their awareness about the importance for everyone today to be able to create links between all the knowledge received when almost carrying out actions; such a need is henceforth unfortunately compulsory since the globalization controlling the whole world today has generated a lot of mutations. Comforting that worry, [4] mentioned that the superficiality of their different knowledge cannot allow them to go to a higher level as far as the interdisciplinary approach is concerned. Supported that thought from [4], [2] insists on the axial position of interdisciplinary within the CBA context. In view of these facts and taking into account the seven years of CBA application in Cameroon, it would be interesting to make an inventory in order to first assess the seriousness of the evil. One could then try to propose local amendments [4], or even local or complete restructuring of the Cameroonian education system [6], with the aim of allowing young Cameroonians to truly profit from the advantages of the competence-based approach. The need to carry out such action is all the more relevant since today, young people from all sides are called upon to meet [7]. In the track of [4], the employer or the evaluator will not be interested in the origins or the learning conditions of the candidates who will pass in front of him, but rather to highlight those of the most well-rounded, applying either for funding or for a position in a reputable company [8]. On a completely different level, the realization of a project requires the ability to set in motion a battery of knowledge, or else to bring together people from different specialties whose energies should be pooled to achieve the prefixed goal [9]. In these different cases, it appears that it is mandatory for the learner to be able to make an undeniable link between their different knowledge ([10]; [11]). Therefore, if the approach led by the teacher has not allowed the learner to take the measure of the importance of interdisciplinary in his learning process [6], it rightly becomes necessary to just provide a set of signs that each learner must be encouraged to keep following, hoping that as puzzles, they could bring him towards the discovering of the importance to carry interdisciplinary reasoning in his academic environment from the outset, then in his daily life in a second time. This new maneuver to be investigated is all the more appropriate to try that in the contemporary world, the young person, in order to get out of it, will have to find themselves, even unconsciously, at the crossroads of many knowledge, both divergent and convergent, which they will have to be able to put together to make their way through the inextricable tangle of difficulties that

punctuate the daily life of the human community. This is the reason that justifies the establishment of this study. It will be a question here of probing the evaluative practices having prevailed until the present time in Cameroon. Such approach will make it possible to identify the strengths and weaknesses of the practices implemented so far [12], in order to provide stakeholders with new ways of proceeding. At the end, we could improve and then personalize the evaluation system. This is the guarantee of the elevation of a youth capable of identifying and dominating the difficulties of his time.

## MATERIAL AND METHODS

In the French-speaking subsystem of general education in Cameroon, the subjects taught are organized into three main sets; the composition of these sets varies with the specialty [13].

To achieve the set objectives, field and laboratory works were carried out. Field work dealt with the collection of various data. It dealt also with the examining of the laws governing the general secondary education of the French-speaking subsystem in Cameroon. In addition, it was a problem of talking with the Heads of Pedagogical Departments in order to highlight the specificities of the concerned Pedagogical Departments. It was also a question

- A question of investigating how evaluations are carried out until today in Cameroon;
- A query of gauging the reaction of learners in front of simulated situations in the event of integration activities and evaluation respectively, and finally of collecting individually the impressions from teachers and parents;
- A question of finding former residents of confessional academic institutions, this in view of collecting their impressions in relation to their experiences during their stay;
- A question of going through the programs as offered in the different Pedagogical Departments in Cameroon.

In the laboratory, the work dealt with

- The grouping of the Pedagogical Departments according to their different programs;
- The production of a survey form, comprising many questions and suggested answers as shown below;
- The development of a more relevant means of bringing together the Pedagogical Departments in the two subsystems of education in Cameroon. In this sense, the possibility of setting up a common problem situation with some local variations depending on the Departments was considered. Such orientation had the purpose of concretizing interdisciplinary in the Cameroonian education system.

### II-1 Design of the criteria judging system

It is presented below.

Not at all <b>1</b>	Quite a few <b>2</b>	Moderately <b>3</b>	Absolutely <b>4</b>	No opinion <b>5</b>
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### II-2 Application of the criteria judgment system to the analysis of the evaluation system in force in Cameroon

#### II-2-1 Level 1: Evaluation scrutiny

<i>Criterion 1: Objectives and structure of the evaluation</i>	
Items	Choice of the answer

**Comment [A2]:** Break it into 2 or 3 paragraphs based on the main idea, so that the display becomes beautiful.

And add a paragraph describing a strong inter-discipline approach in CBA

**Comment [A3]:** The research method you used is not seen here

1) The objectives of the evaluation are clearly defined in advance.	1	2	3	4	5
2) Evaluation activities impose the link between knowledge and daily life.	1	2	3	4	5
3) The structure and conduct of the assessment respond to the needs of learners, intended to be fed to the current global socio-economic contexts.	1	2	3	4	5
4) You evolve in conformism	1	2	3	4	5
5) You often leave the prefixed framework to improve the quality of your evaluations	1	2	3	4	5
<b>Criterion 2 : Contents</b>					
<b>Items</b>	<b>Choice of the answer</b>				
1) The sequence of evaluation activities is clear.	1	2	3	4	5
2) Illustrations drawn from the context of life for the evaluation are sufficient.	1	2	3	4	5
<b>Criterion 3 : Impact of teacher-field worker relations on the quality of the subject of evaluation</b>					
<b>Items</b>	<b>Choice of the answer</b>				
1) You try to justify actions in the field with your theoretical knowledge	1	2	3	4	5
2) The results of your discussions are reformulated into activities for the evaluations.	1	2	3	4	5
<b>Criterion 4 : Control of knowledge and skills, acquisitions, projection</b>					
<b>Items</b>	<b>Choice of the answer</b>				
1) The frequency of evaluations is clear	1	2	3	4	5
2) The evaluation criteria are clear.	1	2	3	4	5
3) You are looking for a societal issue before building your evaluation topic.	1	2	3	4	5
4) Skills assessment is built around this issue.	1	2	3	4	5
5) The knowledge (raw, doing, being, saying) evaluated are ways of simulating the actions of the learners who would find themselves faced with a given reality.	1	2	3	4	5
6) You give yourself enough time to build an evaluation topic.	1	2	3	4	5
7) You are convinced by the quality of your procedure	1	2	3	4	5
8) What findings do you make of your assessments as conducted up to the present time?	.....				
9) If you were to improve your procedures, what aspects would you	.....				

revise?	
10) Do you do a post-evaluation follow-up of your learners in the field context?	.....
11) You see the impact of your assessments on the way learners solve everyday difficulties.	1 2 3 4 5
12) In response to your evaluations, you now notice a change in the perception that your learners have of their environment.	1 2 3 4 5
13) You note in response to your evaluations, the broadening of the scientific culture of the learners.	1 2 3 4 5

## II-2-2 Level 2: Application of the criteria judgment system to the scrutiny of the organization of the evaluations

<b>Criterion 1 : Organization of assessments and progress in the improvement process</b>	
<b>Items</b>	<b>Choice of answer</b>
1) Listing in advance of the issues to be addressed by the evaluations within the establishment.	1 2 3 4 5
2) Content of evaluations consistent, then complementary between Departments.	1 2 3 4 5

## III- RESULTS AND DISCUSSION

### III-1 Specialties and subjects by groups in the French-speaking subsystem of secondary education in Cameroon

With regard to law number 2018/191 of the 02<sup>nd</sup> of March 2018 on the reorganization of the Cameroonian government, secondary education in Cameroon includes six areas of learning characterized by specific subjects. This is the domain of languages and literature (French, English, modern languages II, ancient languages, English and French literature), the domain of Sciences and Technologies (Mathematics, Physics, Chemistry, Computer Science, Life Sciences and Earth, Technology), the domain of Human Sciences (History, Geography, Civic and Moral Education, Philosophy), the domain of personal development (Physical and sports education, manual work), the domain of Arts and national culture (National languages, National Culture, Arts), the domain of Cinema Arts (Fundamentals of cinema, cinematographic nature, film analysis, cinema economics, production process, end-of-training project, sociology of cinema). In general, the different subject from the learning areas are organized into three groups: the subjects of the first group, the subjects of the second group, and the subjects of the third group. The constitution of the groups is under the direct influence of the specialty. In this logic, we can say with [14] that multidisciplinary is a reality in education in Cameroon. Indeed, for this author, interdisciplinary is the connection of two or more school subjects which are exercised at the same time on the curricular, didactic and pedagogical levels, and which leads to the establishment of links of complementarity or

cooperation, interpenetration or reciprocal actions between them under various aspects (purposes, objects of study, concepts and notions, learning approaches, technical skills, etc.).

The detail of the different specialties in the French-speaking subsystem of general education in Cameroon are: Literary specialty (A1, A2, A3, A4, A5, ABI); C specialty; D specialty; TI specialty; SH specialty; AC specialty. Such a distribution is in perfect harmony with the particular character of the education system developed in Cameroon as shown by [15], an aspect reinforced by the multilingualism that characterizes the daily life of the country as underlined by [16].

The A1 specialty (Classical letters) has as subjects of the first group: Latin, Greek, Literature, French language, Philosophy, English; the subjects of the second group of this series are: Computer science, Civic and sports education, Geography, History, Sciences, national language, national culture, artistic education, manual work.

The A2 specialty (Latin, modern languages II) has as subjects of the first group: Latin, Modern language II, Literature, French language, Philosophy, English; the subjects of the second group of this series are: Computer science, Civic and sports education, Geography, History, Sciences, national language, culture, artistic education, manual work

The A3 specialty (letters and Latin) has as subjects of the first group: Latin, Literature, French language, Philosophy, English; the subjects of the second group of this series are: Computer science, Civic and sports education, Geography, History, Sciences, national language, culture, artistic education, manual work

The A4 specialty (Letters and living language II) has as subjects of the first group: Latin, Literature, French language, Philosophy, English; the subjects of the second group of this series are: Computer science, Civic and sports education, Geography, History, Sciences, national language, culture, artistic education, manual work

The A5 specialty (Letters and living languages II) has as subjects of the first group: Living language II, living language III, Literature, French language, Philosophy, English; the subjects of the second group of this series are: Computer science, Physical education and sports, Geography, History, Sciences, national language, culture, artistic education, manual work

The ABI specialty (Letters, Living Languages II, Special Bilingual) has as subjects of the first group: Living Language II, Literature, French Language, Philosophy, Intensive English; the subjects of the second group of this series are: Computer science, Physical education and sports, Geography, History, Sciences, national language, culture, artistic education, manual work

C specialty (Mathematics, Physics) has as subjects of the first group: Mathematics, Physics, Chemistry, Computer Science, Life and Earth Sciences; its subjects of the second group are: Literature, Language, English, Physical education and sports, Geography, History, Sciences, manual work.

D specialty (Life and earth science, environmental education, hygiene and biotechnology) has as subjects of the first group: Life and Earth Sciences, Mathematics, Chemistry, Computer Science; Its second group subjects are: Literature, Language, English, Physical Education and Sports, Geography, History, Science, Physics, and Manual Work.

The TI specialty (Information technology) has as subjects of the first group: Mathematics, Physics, Chemistry, Computer Science; Its second group subjects are: Life and Earth Sciences, Literature, Language, English, Physical Education and Sports, Geography, History, National Culture, Science, Manual Work.

The SH specialty (Human Sciences) has as subjects of the first group: History, Geography, Civic and Moral Education, Philosophy, English, French Language, Literature; the subjects of the second group of this series are: Computer science, Mathematics, Physical education and sport, Sciences, national language, culture, artistic education, manual work.

More in-depth investigations carried out in private confessional institutions revealed the presence of a third group of subjects, composed as follows: Religious studies, Drawing, Music, National Language and Culture, Social and Family Economy. Indeed, confessional education has always developed a very particular vision with regard to the quality of the training made available to learners. It is in this sense that an interview with people who have received this type of education makes it possible to highlight the desire of religious to fully train the young people whose education is entrusted to them according to [17]. A panoramic look at today's society can prove them very much right. In fact, the multiple deviations noted in young people ([18], [19], [20], [21], [22], [23], [24]) quite simply show that these people in cassocks have received since the beginning of their existence the grace to anticipate many social facts long before they appear. As evidence, one can read in the [25] the testimonies made regarding prophetic acts like those of Jeremiah, Elijah, John the Baptist, to name but a few. When one leave from the environment of general confessional education to enter that of general education as experienced in public and then private non confessional schools, it can generally be seen that music, drawing, and religious studies are sometimes absent. As a result, learners from these academic institutions will usually rub shoulders with music and drawing in the context of official exams such as the Baccalaureate and the Certificate of the First Cycle Studies (BEPC) for having chosen them as optional subjects as seems to raise [13]. In this order of idea, these subjects quite simply lose their values to become only vulgar suppliers of marks; at this level, it is safe to say with [6] that "*pointaminosis*" risks tarnishing the quality of training and Cameroonian learners for a long time to come if nothing is done. Further, when it is known that these are artistic subjects and according to the importance of arts in human life as revealed among many others by [26], we are entitled to ask whether the decision-makers in this area have themselves truly assessed the issues when presenting the compulsory topics included in the training of learners as well as in the official exams. In this sense, these artistic subjects in official exams do not have coefficients. They come into play when the candidate has had at least a score of 11/20, i.e. 1 reserved mark. Below the mark of 11/20, the result obtained at the end of the practice of these subjects in an exam situation is simply not considered. We can moreover allow ourselves to say that these so-called optional subjects in the situation specified here can only play the role of stopgap for the candidates.

### **III-2 State of play and implementation of a thematic/personalized evaluation model in Cameroon**

### **III-2-1 Possible links between the Pedagogical Departments on the basis of the content and organization of the programs**

The tables below present in a synthetic way the content of the teaching programs within the different Pedagogical Departments in the French-speaking subsystem of secondary education in Cameroon.

UNDER PEER REVIEW



UNDER PEER REVIEW

Table 1 : content of teaching programs within the Department of French										
	First year	Second year	Third year	Fourth year	Fifth year Literary	Fifth year Science	Sixth year Literary	Sixth year Science	Seventh year Literary	Seventh year Science
First term	Daily life and socio-cultural life				Reading, followed and methodical, the work in its context, report, commentary composes,	Text contraction	Reading, followed and methodical, composed commentary,	Text contraction	Analytical/explained reading, composite commentary, image as message, the poetic text, variety of French, linking in the sentence, referent and substitute...	Text contraction
Second term	Citizenship and environment, economic life				Reading, followed and methodical, the work in its context, report, Dissertation	Dissertation	Reading, followed and methodical, dissertation	Dissertation	Methodical/explained reading, Dissertation, function and aim of the image, prosodic variety, theatrical text, image and literature, syntactic relationship...	Dissertation
Third term	Well-being and health, media and communication				Reading, followed and methodical, the work in its context, report, Literary Dissertation	Literary essay	Reading, followed and methodical, text contraction	Literary essay	Methodical/explained reading, text analysis, latent content, image context	Literary essay

Table 2 : content of the teaching programs within the Department of Philosophy						
	Fifth year Literary	Fifth year Science	Sixth year Literary	Sixth year Science	Seventh year Literary	Seventh year Science
First term	Philosophy, logic		Philosophy	Philosophy	Philosophy, Logic	Philosophy
Second term	The methodology, the logic		Philosophy	Logic	Logic	Logic
Third term	The methodology, the logic		Logic	Methodology	General knowledge of general philosophy	Logic

Table 3 : content of teaching programs within the Computer Science Department										
	First year	Second year	4 <sup>e</sup> Third year	Fourth year	Fifth year Literary	Fifth year Science	Sixth year Literary	Sixth year Science	Seventh year Literary	Seventh year Science

First term	Processing of information and production of documents	Introduction to networks and operating systems	Architecture, maintenance and spreadsheet	Implementation of the computer and production of documents	Implementation of the computer and production of documents	Digital environment and IT security	Digital environment, security, multimedia and information systems	Computer systems and digital humanity	Algorithm and programming
Second term	Internet research and communication	Production of digital documents and introduction to algorithmic reasoning	Numeration and algorithm	Algorithm and multimedia	Programming and multimedia	Algorithm and WEB programming	Algorithm and programming	Computer systems and databases	Computer systems and databases;
Third term						computer graphics, multimedia and digital socio-cultural use	Algorithm and programming	Computer systems and databases	Informatic Systems

Table 4 : content of teaching programs within the Department of Modern Languages (German and Spanish)

	Third year	Fourth year	Fifth year Literary	Sixth year Literary	Seventh year
First term	Family and social life; environment, health, and well-being;				
Second term	Economic life; citizenship				
Third term	Media and communication				

Table 5 : content of teaching programs within the Mathematics Department

	First year	Second year	Third year	Fourth year	Fifth year Literary	Fifth year Science	Sixth year Literary	Sixth year Science 1	Sixth year Science 2	Seventh year Literary	Seventh year Science 1	Seventh year Science 2
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First term	Fundamental relations and operations in the set of decimals and fractions	Representation, determination of quantities and identification of objects by numbers; representation and transformation of plane configurations in the environment	Relations and fundamental operations in the set of real numbers; Representation, determination of quantities and identification of objects by numbers;	Relations and fundamental operations in the set of real numbers;	Relations and fundamental operations in the set of real numbers;	Relations and fundamental operations in the set of real numbers	Relations and fundamental operations in the set of real numbers; configuration and elementary transformations of the plan	Representation, determination of quantities and identification of objects by numbers; representation and transformation of plane configurations in the environment	Relations and fundamental operations in the set of real numbers	Relations and fundamental operations in the set of real numbers; geometry in space; configuration and elementary transformations of the plan	Relations and fundamental operations in the set of real numbers; configuration and elementary transformations of the plan
Second term	Organization and management of data; configuration and elementary transformations of the plan	organization of data and estimation of quantities in all areas of life	configuration and elementary transformations of the plane: representation and transformation of plane configurations in the environment ; organization of data and estimation of quantities in all areas of life	Organization and management of data;	configuration and elementary transformations of the plan		Organization and management of data;	organization of data and estimation of quantities in all areas of life		Organization and management of data;	Organization and management of data;

Third term	Solid s in space	Use of technical objects in life	Space solids. Use of technical objects in life	Organization and management of data;	Organization and management of data;	Organi zation and manag ement of data	organization of data and estimation of quantities in all areas of life	Use of technical objects in life		organization of data and estimation of quantities in all areas of life	Organization and management of data;
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Table 6 : content of teaching programs within the Department of History-Geography-Moral and Citizen Education: Geography												
	First year	Second year	Third year	Fourth year	Fifth year		Sixth year			Tle A	Seventh year Science	
First term	Earth in the Universe	Man in his environment	Physical and human diversity of Africa	Geographical environments of Cameroon; the population of Cameroon	Geomorphology		Population ; migratory movements				Cameroon, country of diversities	
Seco nd	Let's preserve our environment	Man in his living environment; The attraction of cities	The modern economy in Africa	Economic activities in Cameroon	Meteorology and climatology		People's activities					
Third term	Let's protect ourselves against the wrath of nature	Attractions of cities	CEMAC								The liberalization of trade in the world	

Table 7 : content of teaching programs within the Department of History-Geography-Moral and Citizen Education: History

First term	First year The legacy of ancient African civilizations in the thought and construction of the current world	Second year Population and socio-political organization of Cameroon	Third year Slavery and the slave trade; Major population movements in Africa	Fourth year Imperialisms	Fifth year ancient civilizations; Africa's Golden Age	Sixth year Emerging Europe; Africa and Asia victims of external aggressions	Seventh year The changing world
Second term	The legacy of the ancient civilizations of Europe and Asia in the thought and construction of the current world	Africa's golden age	Decolonization and birth of the third world; The great movements of populations in Africa; Attempts at political regrouping in Africa in the 19th century	Crises and wars in the 20th century	the golden age of Africa; the problems of feudal Europe	The world in the throes of crises and wars	
Third term	The contribution of monotheistic religions in the thought and construction of the current world	Relations between Africa and the rest of the world	Europe in the 18th and 19th century	From Kamerun to the Republic of Cameroon	The Civilizations of Asia and America	<div> The scientific and technical revolutions of the 20th and 21st centuries; Cameroon at the end of the  15th century to the beginning of the 20th century: a space under construction </div>	The scientific and technical revolutions of the 20th and 21st centuries; Cameroon: from the struggle for independence to the present day

Table 8 : content of teaching programs within the Department of English

	First year	Second year	Third year	Fourth year	Fifth year	Sixth year	Seventh year
First term	Family and social life ; Economic and life occupation						
Second term	Environment, wellbeing and health						
Third term	Citizenship and human rights ; media and communication						

Table 9 : content of teaching programs within the Department of History-Geography-Moral and Citizen Education: Moral and Citizen Education							
	First year	Second year	Third year	Fourth year	Fifth year	Sixth year	Seventh year
First term	Family and school life	The promotion of national integration	The functioning of the Cameroonian State	Introduction to democracy	Introduction to economic life	The promotion of human rights and moral integrity	The impact of globalization on the development of Cameroon
Second term	Family and school life; Dealing with conflict	Places of national integration	The functioning of the Cameroonian State; Social excesses	Associations	Introduction to economic life; Vocational training and social welfare	The media and public opinion	
Third term	Dealing with conflict	The mass media	Social excesses	Introduction to economic life	Vocational training and social welfare	Promotion of peace/peace education	Sub-regional and regional cooperation

Table 10 : content of teaching programs within the Department of SVTEEHB ( Life and earth science, environmental education, hygiene and biotechnology )												
	First year	Second year	Third year	Fourth year	Fifth year Literary	Fifth year Science	Sixth year Literary	Sixth year Science 1	Sixth year Science 2	Seventh year Literary	Seventh year Science 1	Seventh year Science 2
First term	The living world; matter: its properties and transformations	The living world; health education	The living world; health education	The living world; health education	The living world	The living world	The living world	The living world; health education	The living world			
Second term	Energy: its sources and its management; health education	Health education	Health education	Health education	Health education	Health education	Environmental education and sustainable development	The living world; health education	Health education			

Third term	Environmental education and sustainable development; technology	Environmental education and sustainable development	Environmental education and sustainable development	Environmental education and sustainable development; biotechnology	Environmental education and sustainable development; biotechnology	Environmental education and sustainable development	Environmental education and sustainable development	Biotechnology	Environmental education and sustainable development; biotechnology	and
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Table 11 : content of teaching programs within the Department of PCT (Physics Chemistry Technology)

	Third year	Fourth year	Fifth year		Sixth year Science 1		Sixth year science 2		Seventh year science 1		Seventh year science 2	
			Chimie	Physique	Physique	Chimie	Chimie	Physique	Physique	Chimie	Chimie	Physique
First term	Matter: its properties and transformations; project and engineering elements	Structure of Matter and Elemental Analysis of Organic Compounds		Measurements and uncertainties; movements and mechanical uncertainties	Measurements and uncertainties; movements and interactions	Organic chemistry ;						Measurements and uncertainties; movements and interactions: temporal evolution of mechanical systems
Second term	Mechanical actions and electrical energy	Aqueous solutions		Rectilinear propagation of light	optical	Redox						Time evolution of electrical and electronic circuits
Third term	Chemistry and environmental protection	Aqueous solutions		Resistors, diodes, bipolar transistors and logic gate	Energy Aspects of Electrical Circuits	Redox						Waves, materials and nuclear transformations

Table 12 content of the teaching programs within the Department of EPS (physical education and sports)

	First year	Second year	Third year	Fourth year	Fifth year	Sixth year	Seventh year
First term	shot put; speed race		Speed race ; soccer				
Second term	Volleyball; high jump ; Endurance course ; floor gymnastics		Shot put; floor gymnastics; high jump ; speed endurance race				
Third term	Handball; soccer ; basketball		Basketball ; Volleyball ; Handball				



Table 13 : contents of the teaching programs within the Department of EVA (education for life and love) / Religious studies							
	First year	Second year	Third year	Fourth year	Fifth year	Sixth year	Seventh year
First term	Jesus; the Bible ; good conduct; STIs/STDs/HIV-AIDS	Jesus; the Bible ; puberty changes; STI/STD/HIV-AIDS	The sacraments ; mixed friendship; STI/STD/HIV-AIDS	The sacraments; adolescent psychology;	The credo; human sexuality	The major religions of the world; abortion; STI/STD/HIV-AIDS	faith and reason; marriage and household success
Second term	Jesus; the Bible ; respect for life	Jesus; the Bible ; friendship	The sacraments ; family	The sacraments; pregnancy and early motherhood; STI/STD/HIV-AIDS	The credo; fertility and reproduction; STI/STD/HIV-AIDS	The major religions of the world; parenting, responsibility, and family planning	faith and reason; individual choice in matters of sexuality
Third term	Jesus; the Bible ; puberty changes	Jesus; the Bible ; comparative psychology of girls and boys	The sacraments ; love and genitality	The sacraments; abortion	The credo; abortion	The major religions of the world; human maturity	faith and reason; STI/STD/HIV-AIDS

Table 14 content of teaching programs within the Department of Language, National Culture and Artistic Culture: Artistic Education			
	Fifth year Literary	Sixth year Literary	Seventh year Literary
First term	Formation of a theatrical troupe; creation of history in theatre; writing the play in the theater		
Second term	acting games; accessories and costumes; staging in the theater		
Third term	Components of a poem; write a poem; declaim a poem		

Table 15 : content of teaching programs within the Department of Language, National Culture and Artistic Culture: National language			
	Fifth year	Sixth year	Seventh year
First term	Written and oral expression: family, society, citizenship		
Second term	Written and oral expression: environment, well-being, health		
Third term	Written and oral expression: economics, communication		

Table 16 : content of teaching programs within the Department of Language, National Culture and Artistic Culture: National culture					
	Third year	Fourth year	Fifth year Literary	Sixth year Literary	Seventh year Literary
First term	Culinary arts ; traditional games and leisure		Birth ; traditional economy; family	Birth and death	Birth and death
Second term	Traditional ceremonies; traditional economy; environment ; well-being and health; moral and penal code		Organization of time; traditional architecture; food and clothing	Spirituality; traditional governance; production of cultural products	Mystical illnesses and traditional therapies; techniques of conquest and mastery of the environment; oral literature; traditional civic values
Third term	Traditional communication; cultural wealth		Medicinal plants ; traditional communication	Distribution and consumption of cultural products	Traditional economic system; traditional communication

Table 17 : content of teaching programs within the Department of Music		
	First year	Second year
First term	The foundations of music theory: part one	The foundations of music theory: part two
Second term	Rhythmic reading and writing small melodies	Rhythmic reading and writing small melodies
Third term	Singing reading and writing small melodies	Singing reading and writing small melodies

From the contents of the programs by Educational Department as presented in the various tables above, the possibility of applying to all Educational Departments the thematic evaluation as approached in this study seems to be a little difficult. In fact, it is easy to see that while some Educational Departments are grouped around an average line because of the similarities existing between their various teaching programs, others seem to deviate from it, and this because of the orientation of their specific contents. Thus, the educational Departments that can be found in the same set, that is to say the Departments that can be brought together, are: SVTEEHB (life and earth sciences, environmental education, hygiene and biotechnology), PCT (physics, chemistry, technology), French, EVA (Religion), Mathematics, English, Geography, IT, LVII (modern languages II); this grouping is justified either by the complementarity of their content, or by the areas of daily life that they can cover together; such an approach is in line with that previously developed by [14]. In the second set, we will find the Departments whose paths approach a little bit with difficulty; these are: History, ECM (Civic and Moral Education), and Philosophy. The difficulty here in putting them with others lies in the quality of their contents or the orientation given to their contents. For example, if we consider Philosophy, we will find that in a certain sense, we will greatly debate the problems revolving around philosophy itself; but, we cannot ignore the contribution of this discipline in the logical and coherent reasoning that can be carried out in other disciplines. In this sense, we can say with [27] that Philosophy is indeed the mother of all Sciences. There is a third group; for the corresponding subjects, we can make for them similarities as well as separations. This comes from the fact that in their respective orientations, the programming is such that these subjects can easily come close in certain circumstances to the subjects of the first group; also, they can make it possible to enhance the experience of the subjects of the second group. The Departments concerned are: EPS (physical and sports education), Drawing, Music, L+CN+CA (language, national culture, artistic culture), ESF (social and family economy)/TM (manual work). The possible connections that can be made between these subjects of the third group and the others come from the fact that their respective contents, judiciously contextualized, could allow them to be put at the service of other subjects without dispute. As an example, take a topic like national culture. A contextualized approach to the contents of the History subject could be highly supported by the national culture topic. In this sense, revisiting the way of life of our ancestors, that is to say talking about the national culture, would be the place not only to put the topic of history at the service of the cultural renaissance of Cameroonian youth, but also to strengthen the practice of interdisciplinary in the educational context in Cameroon. Such a vision is in agreement with the thoughts of [28]. In the same vein, the analysis of traditional Cameroonian music as practiced by our ancestors could put music at the service of history as developed by [29]. Indeed, in such a collaboration, history would highlight authentic musical practices such as have prevailed in Cameroon since the dawn of time. Regarding the music topic, it could allow a notation according to the rules established by the basics of music theory. One could then save the authentic songs through the ages according to [30]. With regard to physical education and sports, it can be used for the topic of SVTEEHB (Science of life and earth, environmental education, hygiene and biotechnology) and Geography through actions to recycle plastic materials. Indeed, the sports teacher could, for example, ask to the first and second year learners to make balls using recycled plastic materials. As clauses, he could announce that the three best balloons would have respectively the scores of 20/20, 17.5/20, and 15/20, that they would be exhibited during the cultural festival of the college, and that, bearing the names of the authors, they would be used for the decoration of the office

of the Head of the school. Seen from this angle, the physical education and sports class, by now presenting itself as a playful subject for the youngest, would at the same time become one of the secular arms of the sustainable development of soil, water and air resources, as shown by [31]. Such a vision has the particularity of being able to guarantee the total success of learners at this level in the subject. Indeed, [32] show in the sense that toddlers are more fulfilled when playful aspects are involved in their instruction.

In the case of Departments that can be brought together, it will be a question of building a common problem situation. However, the nuances related to the specificity of the different pedagogical Departments will be highlighted when proposing the tasks to be carried out within the framework of the differential work to be carried out in an evaluation situation. Given that all the subjects contribute to strengthening the control and then the improvement of living conditions in the environment, the problem situation will always have to revolve around life. Such a vision aims to lead the learner by himself to discover in his life the place and the strength of interdisciplinary as underlined by [33].

Concerning the involvement of the Computer Science Department in this group of close Pedagogical Departments, it raises a completely different thinking. Indeed, it seems that the involvement of this Pedagogical Department will require a three-step approach. At first, each learner will be asked in advance to collect elements and then to propose a preliminary work which will be marked on a scale of 5; For example, if we consider the production of a poster, the preliminary phase of the work to be done alone by each of the learners will come down to proposing content for the poster, and possibly images to integrate into it. The grade will not be entered on the learner's script, but directly on the grade report sheets designed in advance according to this logic. In the second phase of the work, also marked on a 5 scale, it will be a question of carrying out group work. Here, after correcting and submitting the content proposals of the poster, the learners will have to try to put together their different proposals in order to bring out a representative content. In the last phase, now in the computer room, in groups, they will have to put up their respective poster; on the document, they will put the title, the number of the group, the names of all the members of the group, and specify the contribution of each member of the group; they will then have to name it, save it in a file for the examiner, then print it for the final phase of the evaluation; this last phase will be marked on a scale of 10. To make such an approach effective for better training of learners, the computer test should be spread over three days, and in particular during the last hours of each assessment day. Obviously, such approach will require that the duration of the tests in this subject be reviewed.

To make even better the impact of interdisciplinary in the training of the learner, it will be appropriate that a single problem situation be proposed. Thus, with some local readjustments according to the particularities of the different Pedagogical Departments in the presentation of this problem situation, the tasks proposed in relation to the said situation will have to ensure that for the same problem, the learner is able to mobilize a set of multidisciplinary knowledge to solve the different aspects related to the problem posed, and this towards an integrated development of a final skill, taking into account the different pedagogical Departments. Therefore, the idea will be a skill made up of sub-skills induced at the level of each Pedagogical Department. In other words, for the same problem, the learner must be able to face it with judgments specific to the different Pedagogical Departments put together (mathematics, computer science, etc.). He will thus develop partial skills in relation to the

different pedagogical Departments, then a total skill by putting together the different partial skills developed. This is then the spirit of project, essential not only in business, but also in the different sectors of life. Indeed, to take action in relation to a given situation, we are always, even unconsciously, called upon to mobilize knowledge from various area of studies. But the great difficulty of the moment lies in being able to bring learners to realize this and to begin to appropriate this unavoidable reality. If this challenge is met, then trials can begin to set up another evaluation system, complementary to the previous one, but much more suitable for senior students (second cycle students), namely the evaluation system per project.

Such an approach is not without difficulties. Indeed, seen from a completely different angle, we may be tempted here to say that by doing so, we will have already made available to the learners the problem situation around which the rest of the bulk of their evaluation session will focus. However, if such a maneuver can allow them to cover their backs by carrying out reflection work on the potential tasks to be offered to them in the particularity of the different Pedagogical Departments having to intervene for such a problem situation, it would be a victory. Undeniably, we would find ourselves developing a new generation of youth, capable of anticipating future situations, or even simulating, depending on the suspected difficulties, approaches with a view to circumventing them when the time comes. In this sense, we will simply, through the channel of the present form of evaluation, launch the design engineer training factory according to the vision of [34]. Given that problem situations will be completely contextualized, they will be engineers fully equipped to deal with the difficulties specific to their environment, with tools and means that are completely adapted; this is in line with the reflections of [6].

In total, following this way of doing things, for the same problem, the learner will have worn different hats, the number of which will depend on the different Pedagogical Departments put together. [35], by valuing such action which she considers as an integrated approach, is full of praise for her.

### **III-2-2 The experience of evaluation in French-speaking secondary schools in Cameroon**

In Cameroon, the number of evaluations per term is set at two. But in confessional secondary schools, this figure is revised upwards. Thus, depending from schools, there will sometimes be three evaluations per term, sometimes four; however, instances of four assessments per term have become somewhat rare. The slightly higher number of evaluations in confessional secondary schools shows the love of religious for permanent, intensive and well-done work. In this sense, we can read in the book of Genesis: "Man, you will eat from the fruits of your labor" [25]. It is therefore not surprising to note that Jesus the Christ, God made Man, shone during his earthly stay by his diligence in the work of carpenter, a function fulfilled by the one who had been chosen to be his earthly father, in particular Joseph. In the same vein, this love for permanent, intense and profound work can also be witnessed by the various works of missionaries in the world in general and in Cameroon in particular, as highlighted by [36].

In detail, beneficial orientations for learners have been initiated in some of the confessional schools. In this sense, from the three evaluations, one values the practical aspects related to the teaching unit; [37], magnifying such an approach, qualify it as an entrepreneurial vision in the school environment. To do even better, some of these schools, to ultimately contextualize

their teaching procedures, have drawn the activities furnishing their practical aspects from the Cameroonian informal sector as suggested by [6]. These include, among other things, the smoke-curing of fish, the production of avocado, coconut and palm oil with regard to the Science lecture for the observation sub-cycle (first year and second year); for the orientation sub-cycle (third and fourth year), we can mention the production of “gari” by the learners from the third year class, and the production of “kossam” by the learners from the fourth year class, all also in the context of Science lecture. For the PCT (physics-chemistry-technology) lecture, it was a question of manufacturing many technical objects (tables and chairs made of local or recycled materials, electric gadgets, brooms, etc.). Concerning the specialization sub-cycle, we are witnessing here the production of juice by processing fruits commonly observed in Cameroon. The juice production activity is judiciously punctuated by the seasons of the different fruits, in order to minimize the acquisition costs of the raw material according to the prescriptions of [38] and [39]. In this same sub-cycle of specialization, we also see the manufacture of cassava “baton de manioc”, “water-fufu”, “mitoumba”, to name a few. Such an orientation is in line with the prescriptions of [6] who, in his reflections on educational orientation in Cameroon, shows how the particularly rich, valued informal sector, could serve as a launching pad for the Cameroonian economy; the author in this sense shows in detail that if this field seems to give to those who engage in it enough to ensure their subsistence, taken with the spirit of people wanting to make a name for themselves, would simply become a gold mine. From there to paraphrase with [40] in the fable entitled The plowman and his children that work is a treasure whatever it may be, and with [41], that there is no stupid trades, but rather stupid people.

Regarding the two theoretical evaluations of the three mentioned above, they are all harmonized. One is a weekly assessment and the other takes place during the intensive session at the end of the term.

In practice here, the various Pedagogical Departments operate completely independently. The evaluation subjects are at least 85% focused on the specific reality of the orientation of each Pedagogical Department. If it sometimes happens that in a burst of pride we find suspicions of markers of interdisciplinary according to [14] in the respective tests, these are quite simply artefacts; these cases represent approximately 15% of the whole cases. It can therefore be noted that in front of the independent character of the evaluations practiced until now in Cameroon, interdisciplinary does a poor job in favor of multidisciplinary. We can then say once again with [14] that the difficulty of learners in Cameroon to make relevant links between their different knowledge when they are faced with difficulties as analyzed by [6] is a marker that translates today the need for decision-makers in this area to think differently about the practice of school in Cameroon. In the part of the question paper dealing with the evaluation of skills as experienced in the different evaluation files by Pedagogic Department, the competence as targeted should therefore rather be considered as a level of partial competence. [2] then [4] see in competency the capacity for an individual faced with a given situation to consider a problem with many hats while remaining particularly coherent. Such a state of action allowing moreover to bring together knowledge from different sides in order to organize them, prioritize them, then interweave them harmoniously to reach an end which is intended to be favorable as projected by [4] by mirroring the types of learners that can be detected by scrutinizing the message inscribed as a watermark behind their class note through the channel of the Matrix that bears its name. The same author, in his matrix for decrypting the message hidden in the watermark behind the marks obtained at each evaluation, presents

the candidate with the code 2.2.b as the one who will be the most apt to adapt to the context of globalization as described by [42]. This is all the more relevant since the financial backer or the recruiter will only be interested in promoting the candidates most likely to contribute to the development of their firms.

The mark obtained at the end of the harmonized weekly assessment and then of the practical activity by subject are put together to produce an intermediate report card. At the end of the term, this grade from the intermediate report card is associated with the grade by subject obtained at the end of the intensive session to produce the quarterly report card. The reality on the field shows that for such practice, the mark of the intensive session has more weight, about 70% of the final mark at the end of the term.

### **III-2-3 Learners and the different subjects/teaching units**

Commonly, the English class and the second living language classes (Spanish, German, and Chinese) to name a few are experienced by many learners as torture. In this sense, during these teachings, we will find many of them either daydreaming or discussing something else, or very far from the classrooms. For the English class, we often hear learners saying: “it is God who gives English”; this is a particularly revealing fact. In the scientific specialties, in fact, language classes in general are completely shunned by the vast majority of learners; the same reality is experienced in the literary series with regard to scientific subjects. This behavior can be justified by the fact that the learners are completely idle, as [6] and [43], among others, seem to point out, or by the fact that they do not directly perceive the impact of these subjects in their potential future life choices, as [44] seem to indicate. Whatever the case, we have the right to worry because there is no life without communication and calculations. Who says communication concomitantly says languages, and who says calculations says Sciences. With [6], it is more than ever the place to re-specify in a contextualized way the place of each of the subjects included in the different programs; thus, along their journey, learners will value a little bit the different topics designed for them, because they know exactly the role of each in their present and future life; such a thought marvelously reinforces the reflections of Landry and [45].

In the particular case of fifth year level, the current of thought recommends total relaxation in the effort; we can then hear them say on a daily basis: “the fifth year level is for resting”. As a result, many cases of indiscipline arise; dynamic learners from fourth year level generally tend to undergo a major metamorphosis there. This is how they become lazy, complicit in many acts of deviance, among others. We can correlate such observation with the ease with which evil spreads like an evil cloud. In this vein, we will see, for example, that in a family environment, the probability of finding children who steal or lies is very high. Most of the time, these are habits acquired during contact with other children; this can happen either at school, or along the road, or at water points, and more. Unfortunately, the presence of such installed defects is only detected at the last minute by the families, and this when their children, supposed to be “saints” according to most families, will have generally committed the irreparable as underlined [18] then [19]. Such situation generates enormous pressure not only on families, as highlighted by [46] in their reflection on the place of the family in the child's schooling process, but also on academic institutions, known as the more indicated places for academic education if we refer to the work of [47]. We can try to explain this

situation with a simple approach. Indeed, at the end of the 3rd year level, the learners were accustomed to taking a certain number of assessments and following a certain number and types of lectures, all culminating in a certification exam, namely the BEPC (second cycle study certificate). Reaching the fifth year level, they find that both in the assessments and in the lectures, even if an informed person would note a gradation in the content, that the change is not as radical: we compose on the same days, the tests pass almost over the same durations, the titles of the subjects are the same...; even worse, they note the absence of certification exams. In addition, the burdens induced by the successive legacies received from the elders first contribute of making the gradation that has taken place in the teachings of this level downright invisible at their level, then to salt the bill. All these elements are so many reasons that can help to justify the learner's strong desire to rest, as they usually say. Such analysis is in perfect agreement with the observations of [48] then [49].

In the context of this study, rumors about the increasingly poor work of learners who were nevertheless subjected in an evaluation situation to activities previously corrected in an integration work situation were perceived. This situation, which is particularly worrying, has led to a desire for verification. Thus, it was posted in many schools, without the knowledge of the teachers and the learners, but with the approval of the heads of schools, people responsible for observing the different class practices and the state of the renderings assessments. Thus, the 1050 learners discreetly followed submitted a piece of work at the end of the evaluation, the analysis of which made it possible to draw up Table 1 and Figure 1 below.

Table 18: Grouping of learners according to the marks acquired at the end of an evaluation relating to work previously corrected

	Marks between 15.5 and 12 over 20	Marks between 12> and 10 over 20	Marks between 10> and 7 over 20	Marks between 7> and 4 over 20	Marks less than 4 over 20
Quantities	100	210	300	200	240
Percentages	9.52%	20%	28.57%	19.05%	22.86%



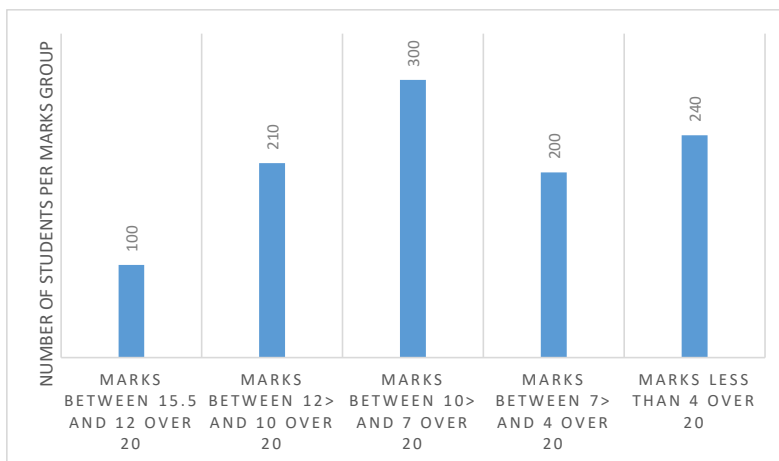


Figure 1: Distribution of learners according to their marks at the end of an evaluation relating to a work previously corrected in a situation of integration work.

On analyzing Table 1 and Figure 1, it can be seen that after a class exercise corrected and then resubmitted later as an evaluation subject, of the 1050 learners monitored, 9.52% (100 learners) recorded a mark including between 15.5 and 12 out of 20, 20% (210 learners) recorded a score between 12 and 10 out of 20, 28.57% (300 learners) recorded a score between 10 and 7 out of 20, 19.05% (200 learners) recorded a grade between 7 and 4 out of 20, 22.86% (240 learners) recorded a grade lower than 4 out of 20. In detail, we will notice that a large proportion of grades is between 10 > and 7 out of 20. According to [50], this group of notes represents the modal class. Further on, 740 of these learners (70.48%) had a grade lower than 10/20 against 310 (29.52%) with grades greater than or equal to 10 out of 20. Quite logically, we are in a particularly worrying situation here. To try to understand such ambiguity, we are entitled here to strike the chord of youth idleness previously highlighted by [6] in response to the overall social failure of the generation of young people preceding the one that takes center stage today; in this sense, we have commonly heard of the sacrificed generation in Cameroon, as [51] translates it so well. In other words, with [6], we can try to say that the social failure of the elders, even after a brilliant school career, cannot be a motivating factor for the younger ones. In the same vein, their presence as actors in the informal sector along the roads in large cities or around markets is sufficiently evocative of this, as shown by [52].

### III-2-4 Analysis of the reality of the Cameroonian French-speaking education subsystem and highlighting its impact on the experience of evaluation in Cameroon

A look at the programs of the different subjects by level reveals that even if the areas of contextualization are a little bit similar, they are organized in a completely different way from one Pedagogical Department to another. The organization of the learning areas, according to the pedagogical prescriptions, necessarily impose the procedure to be respected when producing questions papers by Pedagogical Departments at a specific moment. Such observation confirms the existence in the Cameroonian education system of the concept of multidisciplinary according to [14]. Even if attempts of rapprochement can be forced, certain facts on the field show that there is still a lot of work to be done. This situation was made even more worrying when during investigations in a classroom, a major fact came to light. In

fact, in a fourth grade classroom, the teacher, having to be absent, provided activities for the learners in physics. In the company of the general overseer, a consultation was made by seizing this opportunity. Thus, the supervision of these young people was ensured during this two-hour period. While they were working, a group of them came up with a rather surprising problem. In that vein, after a duly conducted demonstration, it was now a question of performing a series of calculations. It was then that the following question arose: "Please Sir, we have to perform calculations that incorporate fractions. Do we have to carry out the calculations as we use to do in mathematics?" This question immediately caught my attention. So, I went further by asking him if in a mathematics class situation they would have succeeded in the calculation; to this question, they answered in the affirmative. So encouraged in this direction, they arrived at the end of the maneuver smoothly, to my great relief. I went on to ask them if their mathematics teacher would have told them that calculus was discipline dependent; they told me no. I then asked them if they had any idea about the concept of interdisciplinary; to this question, the answer was rather imprecise. A rather daring learner attempted an etymological approach. In this sense, he cut the word into **inter** and **disciplinary**. At the end of this maneuver, he applied a mathematical approach, in particular the notion of intersection. He went on to say with great confidence that interdisciplinary refers to the ability to bring together several subjects. Since he stopped after saying that, I revived the debate by asking if it was just a question of putting together different knowledge. A hesitant voice said: "to solve problems, for example". Surprised by the beauty of the intervention, the author was located after which he was asked to stand up and repeat what he had just said. At the end, the class was told that the reasoning had just been completed by this last statement. Indeed, interdisciplinary is a formidable weapon in solving life problems. Such analysis confirms the place of multidisciplinary at the heart of the Cameroonian education system according to [14]. On a completely different level, this same analysis unfortunately reveals the concept of interdisciplinary which is still struggling to find its steps in the minds of the majority of Cameroonian learners, as illustrated by the classroom highlighted here. But, with [6], the relevant reactions of the two learners who in turn tried to explain the notion of interdisciplinary in their own way and then to put it at the heart of day-to-day problem solving are all signs of hope. It is therefore up to each instructor to assume the heavy task of continuing to fight so that such lights continue to shine in the minds of the young people whose education and instruction are entrusted to them. Even if the will seems to be there, we cannot neglect the means to accompany these heavy actions. Indeed, it has been regularly shown that the man disturbed by the situations of his daily life is very little efficient in a situation either of work, or of creativity; such demonstrations are present in many publications such as those of the journal [53], and it is undoubtedly for this reason that one can find in the updates of [54] the famous proverb of Jean de La Fontaine following: "hungry stomach has no ears". The reverse situation also holds true. This is therefore a mission that should be taken on by the people responsible for managing the situation of instructors because, as the [55] makes clear when speaking of Racine's proverbs, to go far, you have to spare your mount. It is necessary to hammer home this need to review the situation of the teacher in Cameroon because, as the [53] points out, chalk is increasingly repugnant in Cameroon. However, this same chalk is the main tool with which the forger is supposed to forge the youth, presented rightly or wrongly as the spearhead of the nation according to [56], even if according to [51], a whole generation would have been sacrificed due to the occurrence of practices such as nepotism in Cameroonian society according to [57]. To make matters worse, we can highlight scenes where teachers are beaten by parents, by authorities of the republic, by men in

uniform; we can also put on the same stage sequences where these same teachers are murdered by learners they were supposed to instruct; the case experienced at the “Lycée Technique de Nkolbisson in Yaoundé” speaks volumes. Along the same lines, history won't soon forget scenes where the teacher was outright forbidden to cry when he received a beating. These are all wounds that the Cameroonian State would benefit from healing if the future of the continuation of its youth is important, the previous one having been sacrificed as [51] so well underlined.

### **III-2-5 Light on the evaluation practices that have prevailed in Cameroon since the advent of the CBA**

Since the advent of CBA in the school system in Cameroon, the practice of evaluation has highlighted a major fact; it is about the autonomous character of the different Pedagogical Departments. Thus, such a procedure creates a real barrier between the contents of evaluation shifts, due to the fact that they revolve around completely different issues. This is how a kind of autarky is created between the Pedagogical Departments within the same academic institution. Such practice can then be presented as a pharaonic force acquired totally for the benefit of the sustainability of absolute multidisciplinary in the education system in Cameroon according to [14]. This therefore makes it difficult to install interdisciplinary in the same system as [4] and [6] seems to point out, although it is beneficial in the development of skills. Getting out of such impasse means reconsidering the different programs by Pedagogical Department and by level of study, with the aim of rebuilding them around issues overlapping the different Pedagogical Departments. Doing so, without any difficulty, would gradually bring the different Pedagogical Departments closer to the same focal point, a destination where everyone should put the content they had prepared to allow the learner to develop the ability to look at the same problem from several angles without risk contradicting themselves. We would then speak like [46] of the globalizing approach in the academic system of Cameroon.

## **IV-TEST TO REFRAME THE HARMONIZED ASSESSMENT**

The reframing of the harmonized assessment aims to create complementarity between the examination tests in Cameroon. This is the guarantee of the establishment of a "mirror" through which learners will now see hidden behind certain subjects, others. This reality is still known as interdisciplinary approach according to [14], or, as far as neologism is applicable, globalizing approach, or thematic approach, or complementary approach. To succeed in such a challenge, it is important to start from preconceived problems. Issues are the curriculum-related ideas around which harmonized assessment topics across Departments should now revolve throughout the academic year. This would then make it possible to create activities proposed to learners complementary. We should therefore define the maximum that we will keep in a database. From there, one would draw six per academic year, or two per term.

The problems would be designed by a collective made up of:

- Heads of Departments,
- Deans of Studies,

- Pedagogical Advisors.

The formulations would be submitted to the Administration for scrutiny and then validation.

However, it is important to specify here that only the part of the different tests targeting the control of skills is concerned by the globalizing approach highlighted in the context of this work. This orientation comes from the fact that to develop a skill, the candidate must mobilize around a problem, resources from different areas of knowledge, coupled with attitudes commensurate with the targeted objectives. This is in agreement with the studies performed by [10]. Concerning the parts evaluating respectively the resources then the know-how, the know-how to say, and the know-how to be, they will be modeled on the particularities of the different Pedagogical Departments. In the particularity of the French and English Departments, the two exam subjects proposed (text study dictation, and written expression for the French and English Departments) evaluate in their entirety skills related to communication, commitment, and analysis of facts as shown by [58].

In this part of the work, it is a question of simulating the operationalization of the evaluative approach proposed in the framework of the study. To do this, we will rely on the first and second year of the observation sub-cycle, still known as the 6th and 5th grade respectively. To do this, a theme directly linked to the Science program of these different levels has been designed; we have for the 6th grade class: “sexuality in a young environment and involvement in the sustainable management of humanity”; for the 5th grade, we have: “Food and involvement in the sustainable management of humanity”. In both cases, we will produce a common problem situation for the Pedagogical Departments put together. This done, the problem will be scrutinized under the eye of the mathematician, the computer scientist, the geographer, the naturalist, the man of language (English and French), and on the religious level. For reasons of convenience, the parent problem situation may experience some local readjustments from the point of view of form to meet the requirements of each Pedagogical Department; the substance of the text must however remain authentic. In the particularity of the Department of SVTEHBB (Life and Earth Sciences, Environmental Education, Hygiene and Biotechnology), the parent problem situation will not undergo any rehabilitation. This is explained by the fact that the regrouping of the Pedagogical Departments was made around this Department. Indeed, said Pedagogical Department deals with the affairs of life according to [59]. Given that multidisciplinary knowledge aims to improve the living conditions of Man according to [60], it is therefore entirely justified that this Pedagogical Department be the core around which the other Pedagogical Departments of the constituted group gravitate.

Furthermore, to make deeper the field of the application of this concept, even the production of integration activities will require a synergetic work among the different Head of the Pedagogical Departments concerned by the approach. So, as for the new way of evaluation developed within the present study, this is consistent with the concept of the interdisciplinary approach as developed by [14].

#### **IV-1. For the first year students**

In the present case, the different Pedagogical Departments grouped together will have to contribute to the handling of the same problem situation as follows:

1) The French Department will address this problem situation as part of the text study. With regard to written expression, the term should be taken from the same context.

2) The English Department will address this problem situation as part of “Reading comprehension”. Concerning the “essay writing”, the theme must be drawn in the same context.

3) The Department of Mathematics will statistically quantify the facts raised in this context (calculation of quantities, averages, percentages; construction of diagrams, etc.).

4) The Department of Geography will take care of working on the distribution in a given area of sources of contamination (maps and legends, percentages, pyramids, etc.).

5) The Department of EVA/Religion (Education for Life and Love) will revolve around what the young person must be according to God's plan: his passage to adulthood.

6) The Department of SVTEEB (Life and Earth Sciences, Environmental Education, Hygiene and Biotechnology) will study the scourge on the biological and social level.

7) The Computer Department will assist in editing and producing materials for greater awareness.

### **The main contextualized situation**

As part of an HIV/AIDS screening campaign among young people held in the Center Region of Cameroon during the year 2013, 35% of the young population were received; it was noted that the age range of those registered is between 15 and 21 years old. In addition, the population count, carried out a year earlier, revealed that this segment of the population represents 51% of the population of the Center Region-Cameroon. At the end of the tests, 60% of the young people registered were declared positive. The results obtained are recorded in the table below.

Table 19 : Average CD4 count in the different areas during contextualized situation

Areas of the Center Region concerned	Number of positive cases	Average CD4 count in the different areas (copies per ml of blood)
Centre	25.000	260
South	16.500	280
North	18.000	280
West	9.500	300
North-West	6.500	450
South-West	7.500	350
North-East	7.000	400
South-East	9.000	320
East	9800	325

These results greatly worry the various parents in view of the galloping depravity of morals observed in the Center Region. Fortunately, the parents' anxiety did not go unnoticed; thus, on the 22<sup>nd</sup> of March 2021, under the instruction of the Governor of the Center Region, a meeting involving the different actors (administrative body, medical body, parents, N.G.O., etc.) was held in the different areas of this region. The agenda focused mainly on raising awareness among young people.

## Department of SVTEEBB

### *Targeted Partial Skill: Improving Reproductive Health*

On the basis of your knowledge in Life Science, help to make young people learn more about HIV-AIDS.

Task 1: Recommend actions that infected people will have to perform in order to obtain care; you will specify the price of a box of ARVs (3 points).

Task 2: With pertinent justifications, point out the areas of the Center Region to which antiretroviral drugs should already be sent (3 points).

Task 3: After having made the difference between HIV positive and AIDS, help healthy people to avoid contamination (4 points).

## Department of Geography

### *Targeted partial competency: mapping a plague then characterizing the conditions of its living environment*

As part of an HIV/AIDS screening campaign among young people held in the Center Region of Cameroon during the year 2013, 35% of the young population were received; it was noted that the age range of those registered is between 15 and 21 years old. In addition, the population count, carried out a year earlier, revealed that this segment of the population represents 51% of the population of the Center Region-Cameroon. At the end of the tests, 60% of the young people registered were declared positive. The results obtained are recorded in the table below.

Table 20 : Average CD4 count in Department of Geography

Areas of the Center Region concerned	Number of positive cases	Average CD4 count in the different areas (copies per ml of blood)
Centre	25.000	260
South	16.500	280
North	18.000	280
West	9.500	300
North-West	6.500	450
South-West	7.500	350
North-East	7.000	400
South-East	9.000	320
East	9800	325

These results greatly worry the various parents in view of the galloping depravity of morals observed in the Center Region. Fortunately, the parents' anxiety did not go unnoticed; thus, on the 22<sup>nd</sup> of March 2021, under the instruction of the Governor of the Center Region, a meeting involving the different actors (administrative body, medical body, parents, N.G.O., etc.) was held in the different areas of this region. The agenda focused mainly on raising awareness among young people.

Foreigners who took part in this meeting would like to get an idea of the physical and bioclimatic environment of the test area. You are then asked to characterize the environment in the test area using your knowledge of Geography by following the procedure below.

Task 1: On the map of Cameroon below showing the Center Region, indicate with different colors the areas that have been the subject of screening tests (4 marks). Instructions: the legend will be very useful.

Task 2: Some people say that the Ministry of Public Health must put hospitals on alert. In fact, when AIDS and malaria combine, deaths number in the hundreds. Based on the climate and vegetation of this part of the country, prove these people right (3 marks).

Task 3: Rainfall and thermal data for the Center Region-Cameroon are presented in the table below. Build your rainfall diagram (3 marks).

	January	February	March	April	May	June	July	August	September	October	November	December
Mean Température (°C)	24.5	24.5	24.6	24.3	24.1	23.3	22.8	22.6	23.1	23	23.6	23.9
Precipitations (mm)	22	53	143	181	215	163	79	98	253	298	114	24

## Mathematics Department

### *Targeted Partial Competency: Evaluate Quantities*

As part of an HIV/AIDS screening campaign among young people held in the Center Region of Cameroon during the year 2013, 35% of the young population were received; it was noted that the age range of those registered is between 15 and 21 years old. In addition, the population count, carried out a year earlier, revealed that this segment of the population represents 51% of the population of the Center Region-Cameroon. At the end of the tests, 60% of the young people registered were declared positive. The results obtained are recorded in the table below.

Table 21: Average CD4 count in the different areas

Areas of the Center Region concerned	Number of positive cases	Average CD4 count in the different areas (copies per ml of blood)
Centre	25.000	260
South	16.500	280
North	18.000	280
West	9.500	300
North-West	6.500	450
South-West	7.500	350
North-East	7.000	400
South-East	9.000	320
East	9800	325

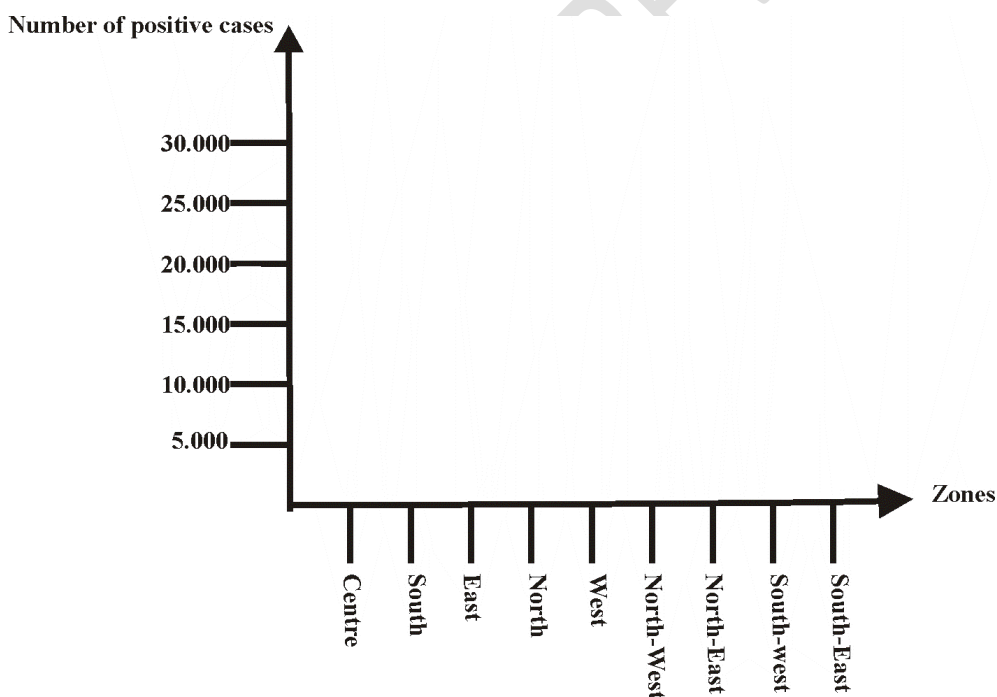
These results greatly worry the various parents in view of the galloping depravity of morals observed in the Center Region. Fortunately, the parents' anxiety did not go unnoticed; thus, on the 22<sup>nd</sup> of March 2021, under the instruction of the Governor of the Center Region, a meeting involving the different actors (administrative body, medical body, parents, N.G.O., etc.) was held in the different areas of this region. The agenda focused mainly on raising awareness among young people.

Your mom would like a quantified approach to cases of contamination. You are then asked to shed light on the basis of your knowledge in Mathematics.

Task 1: Calculate the number of HIV positives in this population, the number of HIV positives already eligible for ARVs drugs, and the fraction of these HIV positives not yet eligible for treatment (3 marks).

Task 2: Determine the number of young people who have undergone the test, the number of young people, and the number of people in the Center Region (3 marks).

Task 3: Using the figure below, construct a bar chart showing seroprevalence in the different areas (4 marks). Instructions: the most affected area will be in red and the least affected area in orange.



**Figure 2 :Positive cases ratio**

**Computer Science department**

***Targeted partial competency: mounting a poster raising awareness against HIV-AIDS***

As part of an HIV/AIDS screening campaign among young people held in the Center Region of Cameroon during the year 2013, 35% of the young population were received; it was noted



that the age range of those registered is between 15 and 21 years old. In addition, the population count, carried out a year earlier, revealed that this segment of the population represents 51% of the population of the Center Region-Cameroon. At the end of the tests, 60% of the young people registered were declared positive. The results obtained are recorded in the table below.

Table 22 : Average CD4 count in Computer Science department

Areas of the Center Region concerned	Number of positive cases	Average CD4 count in the different areas (copies per ml of blood)
Centre	25.000	260
South	16.500	280
North	18.000	280
West	9.500	300
North-West	6.500	450
South-West	7.500	350
North-East	7.000	400
South-East	9.000	320
East	9800	325

These results greatly worry the various parents in view of the galloping depravity of morals observed in the Center Region. Fortunately, the parents' anxiety did not go unnoticed; thus, on the 22<sup>nd</sup> of March 2021, under the instruction of the Governor of the Center Region, a meeting involving the different actors (administrative body, medical body, parents, N.G.O., etc.) was held in the different areas of this region. The agenda focused mainly on raising awareness among young people.

Based on your knowledge in Computer Science, help fight the evil advancing in this region by following the steps presented by the tasks below.

Task 1 (first phase of the evaluation): each produce the content of a poster to raise awareness among young people about HIV-AIDS (5 marks) Instructions: each learner's script will bear his name

Task 2 (second phases of the assessment): in groups, the learners put together their work done solo in order to produce the content of the poster that the group will present. Instruction: images will be useful (5 marks). Instructions: the script of each group will bear the number of the group and the name of the members of the group.

Task 3 (third phase of the assessment): Produce the poster as a group, save it in a folder, then print it to give the hard copy to the examiner (10 markss). Instructions: the group number, the name of each member of the group, then the contribution of each member of the group will be specified on the poster.

NB: If in e first year level the practical work in computer science is not programmed, task 2 (scored out of 10) will be accompanied by a questionnaire (scored out of 5) independently produced by the examiner.

### Department of EVA/Religion

As part of an HIV/AIDS screening campaign among young people held in the Center Region of Cameroon during the year 2013, 35% of the young population were received; it was noted that the age range of those registered is between 15 and 21 years old. In addition, the population count, carried out a year earlier, revealed that this segment of the population represents 51% of the population of the Center Region-Cameroon. At the end of the tests, 60% of the young people registered were declared positive. The results obtained are recorded in the table below.

Table 23 : Average CD4 count in EVA/Religion

Areas of the Center Region concerned	Number of positive cases	Average CD4 count in the different areas (copies per ml of blood)
Centre	25.000	260
South	16.500	280
North	18.000	280
West	9.500	300
North-West	6.500	450
South-West	7.500	350
North-East	7.000	400
South-East	9.000	320
East	9800	325

These results greatly worry the various parents in view of the galloping depravity of morals observed in the Center Region. Fortunately, the parents' anxiety did not go unnoticed; thus, on March 22, 2021, under the instruction of the Governor of the Center Region, a meeting involving the different parties (administrative body, medical body, parents, etc.) was held in the different areas of this region. The agenda focused mainly on raising awareness among young people.

In view of your knowledge of divine prescriptions for humanity, reframe the habits of young people in the Center region based on the tasks proposed below.

Task 1: Many young people today justify their bestial sexuality with the following verse: "Go! Multiply and fill the earth!" Remind them of the real meaning of this verse (4 marks).

Task 2: Returning to the book of Exodus, and particularly to the passage where the God of Abraham, Isaac and Jacob, after having drawn Moses to himself on Mount Sinai, asked him to remove his sandal because he was in a sacred ground, specify to these young people the need for them to clean up their lives (3 marks).

Task 3: Conclude in the light of the wedding masses by revealing in what situation the male human and the female human can indulge in sexual pleasure without risking offense to the sacred heart of Jesus. Instructions: the famous verse commonly used at wedding masses would be of great use here.

### French and English Departments

Here we have three tests: dictation, the study of a situation, and an Essay writing according to some topics duly proposed. In details, Dictation must be the first test to be proposed to students.

## **SITUATION**

During an HIV/AIDS screening campaign conducted among young people in 2013 in the Center Region of Cameroon, 35% of the young population were received; it was noted that the age range of those registered was between 15 and 21 years old. In addition, the population count, carried out a year earlier, revealed that this segment of the population represented 51% of the population of the Region. At the end of the investigations, 60% of the young people registered were declared HIV-positive. The results obtained varied from one area to another. So, Nkoldongo and Mvog-Ada sectors were the most affected by the disease (25,000 positive cases). This is due to the high concentration of bars and the libertinism observed in families. The Messamendongo and Ahala districts, which belong to the penetrating east of the Region, numbered 16,500 positive cases; Ekounou and Nkoabang areas enter the dance with 18,000 positive cases. Going from West to the South-East of the Region, serology was less important. Therefore, there are 9,500 cases for Nkolbisson and the surroundings districts; 6500 between Emana and Etoudi; 7500 for Bastos and Tsinga; 7,000 for the Mendong and Biyem-Assi areas; 7000 in Ngousso and Mimboman; and 9000 in Nkomo Ekié and Awae.

These results greatly worried the various parents in view of the galloping depravity of morals observed in the Center Region. Fortunately, the parents' anxiety did not go unnoticed; thus, on March 22, 2021, under the instruction of the Governor of the Center Region, a meeting involving the different parties (administrative body, medical body, parents, etc.) was held in the different areas of this Region. The agenda focused mainly on raising awareness among young people.

Excerpt from the work of F. Tuebue (2001)

## **ISSUES**

### **I-READING COMPREHENSION**

- 1) Identify the disease referred to in the text. (1 mark)
- 2) What is the percentage of young people affected by this disease in the Center Region? (1 mark)
- 3) Give a title to this text and justify your answer using a sentence taken from the text (2 marks)
- 4) Which are the two most affected districts? Which facts can justify such a situation? (2 marks)
- 5) What are the measures taken by the Governor of the Center Region to stop this disease? (2 marks)
- 6) If you were the Governor, how would you have proceeded to fight against this disease? Justify your answer with two well-constructed sentences. (2 marks)

## **II-KNOWLEDGE AND HANDLING OF THE LANGUAGE.**

- 1) Explain the underlined words and expressions within the text. (2 marks)
- 2) Find in the text four (4) words or expressions that belong to the lexical field of health. (2 marks)
- 3) Either the extract: "the young population has been received", identify the verb in this sentence and give its infinitive form. Then put this verb in the present imperative form. (2 marks)
- 4) To which register of language does the expression belong: "With regard to the galloping depravity of morals"? Identify in the text a sentence which belongs to another type of register. (2 marks)
- 5) Put in the plural form the nominal group "medical body" and justify this agreement. (2 marks)

### Dictation

During a screening campaign for HIV/AIDS\*, carried out among young people, it was noted that the age group of the people registered ranges from fifteen to twenty-one years. The population count, carried out one year before, revealed that this segment of the population represents more than half of the population of the Center Region. At the end of the tests, many young people were declared positive. The results obtained varied from one area to another. These results were of great concern to the various parents. The anxiety of the parents did not go unnoticed very fortunately. Thus, under the instruction of the governor of the Centre Region, a meeting involving the various parties, namely the administrative body, the medical body, the parents was held in the different areas of this Region. The agenda was mainly focused on sensitizing the youth.

F.Tuebue, Excerpts from work, 2001

\*Write HIV/AIDS on the board.

### Essay writing

**Targeted skill:** Produce an argumentative text.

**TASK:** While the latest results of tests carried out on young populations reveal a high rate of HIV / AIDS contamination, an awareness campaign is organized for this purpose in your neighborhood and you are responsible for enlightening them on this social scourge. Produce an argumentative text in which:

- 1- You define the disease and its causes in an introduction of five (5) lines.
- 2-You present the manifestations and consequences of HIV/AIDS through two paragraphs of ten (10) lines each.
- 3-You give them three tips to avoid this disease in a conclusion of five (5) lines.

In a clear and simple style, your assignment must contain the lexical field of health, the verbs in the imperative form and the appropriate language register.

#### **IV-2. For second year students**

Concerning the work to be done for this level, the different Pedagogical Departments grouped together will have to contribute to the handling of the same problem situation as follows:

- 1) The French department addresses this problem situation within the framework of the text study. Concerning the essay writing, the theme will have to be drawn in the same context.
- 2) The English department addresses this problem situation within the framework of "Reading comprehension". Regarding the "dissertation", the theme must be taken from the same context.
- 3) The Department of Mathematics will perform the calculation of quantities, averages, percentages. Moreover, it will perform the construction of diagrams, etc.).
- 4) The Geography Department will work on the impact of economic activities on the sustainable development of the environment; he will also be interested in food processing.
- 5) The Department of EVA will dwell on the place of Adam and Eve in the world entrusted to them by the Creator.
- 6) The Department of SVTEEB (Life and earth science, environmental education, hygiene and biotechnology) will shed light on the action of microorganisms around us by emphasizing the impact of their functioning on the quality of our food.
- 7) The IT department will help set up and produce posters for greater awareness.

#### **Common problem situation**

Tegue inherited a rectangular space 800 m long and 250 m wide. He decided to grow corn there. Aware of his shortcomings, however, he decided to seek a short training course at IRAD in this direction. He was thus instructed on the needs in mineral salts, space, water, and light of many plants. In detail, per corn sowing point, we put 3 seeds; between two sowing points, along a line, there is a space of about 25cm; between two lines of corn, there is a space of about 85cm. He also knows that a corn seed weighs about 0.6g. Finally, he was taught that when the soil residual nitrogen rate is less than 60 kg/ha, an input of 40 kg/ha of this element can cover the nitrogen needs of a maize plant until it has 10 leaves. When evening comes, Tegue grabs his leftover corn cake from the day before. 15 minutes after eating it, he begins to sweat, has the impression of having double vision, and a strong urge to vomit among other signs. Two days later, he had yellow eyes and back pain. An analysis made allows us to estimate that when he left the cake at 2:30 p.m. the day before, there were 25 bacteria, and when he ate this dish the next day at 4:30 p.m., there were many bacteria and microscopic fungi. Finally, we know that the species of bacteria present multiplies every 30 minutes.

**Department of SVTEEB** (Life and earth science, environmental education, hygiene and biotechnology)

***Focused Partial Competency: Improving Food Health***

Tegue's cousin also did not go to school for long. But, he is aware about the fact that each event can have a scientific explanation. While most family members attribute Tegue's illness to poisoning, he is busy questioning himself about potential reasons that can justify such a situation. You are then invited to ease his understanding in order to prevent the occurrence of new disasters of this kind in their family. You will rely on the joints proposed below.

Task 1: Show how the food hygiene measures hidden here have favored the explosion of the bacterial population in the food (2 marks), then redirect behaviors by prescribing two actions for a healthier future (1 mark).

Task 2: From the quantity of bacteria now present in the food as same as the new components to be highlighted, shed light on the intensity of the phenomenon taking place and precise how was the rest of the concerned food when it was eaten by Tegue (3 marks).

Task 3: Emphasize the substance and its source, that makes the illness to occur (2 marks), and then conclude by diagnosing the pathology of Tegue (2 marks).

## **Mathematics department**

### ***Focused Partial Competency: Determination of quantities***

Tegue inherited a rectangular space 800 m long and 250 m wide. He decided to grow corn there. Aware of his shortcomings, however, he decided to seek a short training course at IRAD in this direction. He was thus instructed on the needs in mineral salts, space, water, and light of many plants. In detail, per corn sowing point, we put 3 seeds; between two sowing points, along a line, there is a space of about 25cm; between two lines of corn, there is a space of about 85cm. He also knows that a corn seed weighs about 0.6g. Finally, he was taught that when the soil residual nitrogen rate is less than 60 kg/ha, an input of 40 kg/ha of this element can cover the nitrogen needs of a maize plant until it has 10 leaves. When evening comes, Tegue grabs his leftover corn cake from the day before. 15 minutes after eating it, he begins to sweat, has the impression of having double vision, and a strong urge to vomit among other signs. Two days later, he had yellow eyes and back pain. An analysis made allows us to estimate that when he left the cake at 2:30 p.m. the day before, there were 25 bacteria, and when he ate this dish the next day at 4:30 p.m., there were many bacteria and microscopic fungi. Finally, we know that the species of bacteria present multiplies every 30 minutes.

Tegue would like to get an idea not only of the quantities of seeds he will have to collect, but also of the yields he could have. You are therefore asked to do so. By following the steps below and using your math knowledge, help solve his problem.

Task 1: Assuming that the rows of maize are oriented along the length of the field, carry out the following actions then conclude by finding the number of 50kg bags of seed that he will have to constitute to easily move his seed (3 marks):

- Calculate the number of rows of maize that this field can receive as well as the number of sowing points per row;

- Calculate the number of sowing points over the entire field and the total number of seeds to be sown;

- Calculate the total mass of the seed transported by Tegue.

Task 2: Assuming that all the seeds have germinated, that all the cobs bear about 200 seeds, and that each corn stalk bears two cobs, then predict the mass of the expected harvest (3 points).

Task 3: in order to plan an upcoming fertilizer application, find the volume of soil in this field to a depth of 40 cm (2 points); then, represent the field in three dimensions at 1/50 (that is to say, emphasizing the length, the width, and the depth considered) (2 points).

### **Department of Geography**

#### ***Focused Partial Competency: the characterization of a given environment***

Tegue inherited a rectangular space 800 m long and 250 m wide. He decided to grow corn there. Aware of his shortcomings, however, he decided to seek a short training course at IRAD in this direction. He was thus instructed on the needs in mineral salts, space, water, and light of many plants. In detail, per corn sowing point, we put 3 seeds; between two sowing points, along a line, there is a space of about 25cm; between two lines of corn, there is a space of about 85cm. He also knows that a corn seed weighs about 0.6g. Finally, he was taught that when the soil residual nitrogen rate is less than 60 kg/ha, an input of 40 kg/ha of this element can cover the nitrogen needs of a maize plant until it has 10 leaves. When evening comes, Tegue grabs his leftover corn cake from the day before. 15 minutes after eating it, he begins to sweat, has the impression of having double vision, and a strong urge to vomit among other signs. Two days later, he had yellow eyes and back pain. An analysis made allows us to estimate that when he left the cake at 2:30 p.m. the day before, there were 25 bacteria, and when he ate this dish the next day at 4:30 p.m., there were many bacteria and microscopic fungi. Finally, we know that the species of bacteria present multiplies every 30 minutes. Tegue has heard that all human activities either positively or negatively influence the environment. Thus, he would like to know not only how his project will affect his environment, but also what foodstuffs his production could serve as raw material. Based on your knowledge in Geography Science, carry out the work for him using the links below.

Task 1: Briefly explain the respective procedures of three common agricultural practices around you (3 points).

Task 2: shed light on the evolution of the three main components (soil, water, air) of the environment in response to the practice of intensive agriculture (3 points).

Task 3: Choose a maize-based food then explain the procedure for processing maize into this food (3 points); Finally, propose for corn the most common conservation method around you (1 point).

Task 4: Make the link between agriculture, livestock, and trade in a Region of Cameroon of your choice (4 points).

### **Department of Computer Science**

Tegue inherited a rectangular space 800 m long and 250 m wide. He decided to grow corn there. Aware of his shortcomings, however, he decided to seek a short training course at IRAD in this direction. He was thus instructed on the needs in mineral salts, space, water, and light of many plants. In detail, per corn sowing point, we put 3 seeds; between two sowing points, along a line, there is a space of about 25cm; between two lines of corn, there is a space of about 85cm. He also knows that a corn seed weighs about 0.6g. Finally, he was taught that when the soil residual nitrogen rate is less than 60 kg/ha, an input of 40 kg/ha of this element can cover the nitrogen needs of a maize plant until it has 10 leaves. When evening comes, Tegue grabs his leftover corn cake from the day before. 15 minutes after eating it, he begins to sweat, has the impression of having double vision, and a strong urge to vomit among other signs. Two days later, he had yellow eyes and back pain. An analysis made allows us to estimate that when he left the cake at 2:30 p.m. the day before, there were 25 bacteria, and when he ate this dish the next day at 4:30 p.m., there were many bacteria and microscopic fungi. Finally, we know that the species of bacteria present multiplies every 30 minutes.

He needs to get an idea of the history of maize production over the past ten years in Cameroon. In this sense, he needs your support. With the help of groups of friends, help him by following the steps below.

Part 1: Each students will look for information and produce a report on maize production for the past ten years; this report will include the varieties grown, yields, marketing, and the difficulties encountered (5 points).

Part 2: Production of a summary document at the level of each group based on the work of each member of the group; in doing so, it will be important to compare the maize production of each year with that of the previous year (5 points).

Part 3: produce the digital file of the group work in which you will insert an histogram comparing maize production over the ten years considered. The document will be written in Times News Roman font, size twelve, and black font color. It will finally be saved in a file, then printed so that a hard copy is given to the examiner (10 points).

### **Department of EVA/Religion**

Tegue inherited a rectangular space 800 m long and 250 m wide. He decided to grow corn there. Aware of his shortcomings, however, he decided to seek a short training course at IRAD in this direction. He was thus instructed on the needs in mineral salts, space, water, and light of many plants. In detail, per corn sowing point, we put 3 seeds; between two sowing points, along a line, there is a space of about 25cm; between two lines of corn, there is a space of about 85cm. He also knows that a corn seed weighs about 0.6g. Finally, he was taught that when the soil residual nitrogen rate is less than 60 kg/ha, an input of 40 kg/ha of this element can cover the nitrogen needs of a maize plant until it has 10 leaves. When evening comes, Tegue grabs his leftover corn cake from the day before. 15 minutes after eating it, he begins to sweat, has the impression of having double vision, and a strong urge to vomit among other signs. Two days later, he had yellow eyes and back pain. An analysis made allows us to estimate that when he left the cake at 2:30 p.m. the day before, there were 25 bacteria, and when he ate this dish the next day at 4:30 p.m., there were many bacteria and microscopic fungi. Finally, we know that the species of bacteria present multiplies every 30 minutes.



Horried by the laziness of many young people which can justify the existence of the different deviations observed today among them, you are asked to help changing their behavior. For this, you will rely not only on your biblical knowledge, but also on the links proposed below.

Task 1: Justify the following statement and then find its author: “Man, you will eat by the fruit of your labor!” (2 points). It will be important to note the context in which this statement was made (1 point).

Task 2: Using your knowledge of the Bible, show that the childhood of Jesus Christ justified the place of daily work in human life (3 points).

Task 3: Using two raw materials and two finished products found in the Bible, show that food processing is an age-old practice. The finished products present in the Bible intervene in a great symbol which justifies until our days the place of charity in Christian environment; recognize this symbol. Hint: The numbers 2 and 5 are contained in this symbol.

### **Department of French and English**

Here we have three tests: dictation, the study of a situation, and an Essay writing according to some topics duly proposed. In details, as for the previous level, Dictation must be the first test to be proposed to students.

#### **Situation**

The socio-economic context of the country has become particularly difficult for many young Cameroonians. Many of them have decided to practice urban exodus, as is the case with Tegue. Indeed, it has inherited a rectangular space. He decided to produce maize there. Aware of his shortcomings, however, he decided to seek a short training course at IARD (Institute for Agronomic Research and Development) in this direction. He was thus instructed on the needs in mineral salts, space, water and light of many plants. In detail, per corn sowing point, three seeds are placed; per two corn sowing points, along a line, there is a space of about twenty-five centimeters; between two corn lines, there is a space of about eighty-five centimeters. He also knows that a corn seed weighs about 0.6g. In the evening, Tegue grabbed his leftover corn cake from the sink the day before. Fifteen minutes after eating it, he sat down to sweat, has the impression of having double vision, and a strong urge to vomit among other signs. Two days later, he had yellow eyes and he had back pain. When he left the cake the day before at 2:30 p.m., there were twenty-five bacteria and when he ate this dish the next day at 4:30 p.m., there were many bacteria and microscopic fungi. Finally, we know that the variety of those bacteria present multiplies every thirty minutes.

F.Tuebue , Extracts from work.

#### **ISSUES**

##### **I-Reading comprehension**

- 1) Why do young people practice urban exodus? (2 marks)
- 2) What does Tegue inherit? What does he intend to produce? (2 marks)
- 3) How does he do it before starting production? Explain what he was taught. (2 marks)

- 4) Identify the symptoms Tegue felt after eating his corn cake. (2 marks)
- 5) Given the difficult conditions in the country, would you have left the city like Tegue to go and cultivate the land in the village? Justify your answer. (2 marks)

## II-KNOWLEDGE AND HANDLING OF LANGUAGE

- 1) Explain the underlined words and expressions from the text (2 marks)
- 2) Find the synonyms and antonyms of the following qualifying adjectives: difficult, present. (2 marks)
- 3) Give the nature of the propositions in the following sentence: "He knows that a corn seed weighs about 0.6g. (2 marks)
- 4) Indicate in which voice the following sentence is: He was giving up the cake the night before. Put it on the opposite voice. (2 marks)
- 5) Justify the way the past participle form of the verb within the following sentence is written: "He has decided...". (1 mark)
- 6) Put the verb of this sentence in the past perfect tense: "he ate this dish". (1 mark)

## DICTION

The socio-economic context of the country has become particularly difficult for many young Cameroonians. Many of them have decided to practice urban exodus, as is the case with Tegue\*. In fact, it has inherited a rectangular space. He decided to produce corn there. Aware of his shortcomings, however, he decided to seek a short training in this direction. He was thus instructed on the needs of many plants. In the evening, Tegue grabbed his leftover corn cake from the sink a day before. After eating it, he begins to sweat, had the impression of having double vision, and a strong urge to vomit among other signs. Two days later, he had yellow eyes and back pain. Analysis made allows to estimate that when he abandoned the cake the day before, there were bacteria and when he ate this dish the next day, there were many bacteria and microscopic fungi.

\*Write on the blackboard

F.Tuebue, Excerpts from work, 2011.

## Essay writing

**Targeted competence:** Produce an argumentative text.

**TASK:** Given the particularly difficult socio-economic context in the country, young Cameroonians decide to leave the city to settle in rural areas in order to exploit the natural resources and particularly to engage in agriculture. You agree to encourage them in this way. And for that, you must produce an argumentative text in which:

1-You present in five (5) lines the phenomenon of urban exodus in the introduction.

2-In a development of ten (10) lines, gives three advantages related to the practice of agriculture.

3-In a conclusion of five (5) lines, give two pieces of advice to motivate those who were still reluctant to do so.

In a clear and simple style, your assignment should include synonyms and antonyms, the conditional mood and the complete subordinate clause.

## **V - CONCLUSION**

Secondary education in Cameroon has six domains of learning. These include languages and literature, Science and Technology, Human Sciences, personal development, Arts and national culture, and Cinema Arts. A distinction is made between the subjects of the first group, the subjects of the second group, and the subjects of the third group. The application to all Pedagogical Departments of the thematic evaluation seems a little difficult because of the orientation of their specific contents of the hour. The educational departments that can be brought together are: SVTEEHB (life and earth sciences, environmental education, hygiene and biotechnology), PCT (physics, chemistry, technology), French, EVA (Religion), Mathematic, English, Geography, IT, LVII (modern languages II). In Cameroon, the number of evaluations per quarter is set at two. But in confessional secondary schools, there are three and more rarely four. The evaluation system highlights the autarky existing between the different Pedagogical Departments. Many topics are experienced by many learners as a torture. In the specificity of scientific specialties indeed, language courses in general are completely shunned; the same reality is experienced in the literary specialties with regard to scientific subjects. The reframing of the harmonized assessment aims to create complementarity between the examination tests in Cameroon. This is the guarantee of the establishment of a "mirror" thanks to which learners will now see hidden behind certain subjects, others. This vision can also be designated under the following expression: interdisciplinary approach, or globalizing approach, or thematic approach, or complementary approach. The success of such a challenge requires the prior creation of themes to guide the evaluations. To make the interdisciplinary approach a reality in Cameroon, it is necessary to reconsider the different programs by Pedagogical Department and by level of study, with the aim of reconstructing them around issues overlapping the different Pedagogical Departments.

## **REFERENCES**

- [1] Bonner S. E. - Choosing teaching methods based on learning objectives: An integrative framework. *Issues in Accounting Education*, 14 (1), 1999, pp. 11-15.
- [2] Cros F., JM de Ketele, Dembélé M., Develay M., Gauthier RF, Ghriss N., Lenoir Y., Murayi A., Suchaut B., Tehio V. - Study on curriculum reforms using the skills-based approach Africa. [Research report] International Center for Educational Studies (CIEP). 2009, 222 p. halshs-00523433

- [3] Ondoua P., the sole reason for the “planetary village”. Myths and realities of globalization, African Thought Collection, Sub-Saharan Africa, the Harmattan, African Poetry, 2010, 238p, ISBN: 978-2-296-12706-7
- [4] Fopoussi Tuebue J.C., Contribution to the Development of a Tool for Deciphering the Message Conveyed by Marks for Better Support of Learners in Competence Based Approach: Case Study of Cameroon. 22(1): 1-16, 2021a; Article no.AJESS.73916 ISSN: 2581-6268
- [5] Seys J. Winners and losers, or the challenges of success. Paris cedex 14, France: Presses Universitaires de France. 2011; pp157-159.
- [6] Fopoussi Tuebue J.C., Adaptation between the School Context in the Francophone Educational Sub-System of General Education in Cameroon and the Learner's Entry into the World of Employment: School Guidance. Asian Journal of Education and Social Studies, 24(1): 39-54, 2021b; Article no.AJESS.77861 ISSN: 2581-6268
- [7] Benassy-Quere A., Chavagneux C., ELoi L., Plihon D., Rainilli M., The challenges of globalization: Major economic and social issues III, Collection Landmarks, EAN: 9782348042829, Serial code: 490, 2019, 128p.
- [8] Grzesiak L., The challenges of the decade according to the RIS, RIS-118, summer 2020, The dossier: 2020-2030: the challenges of the decade, Arman Colin/IRIS editions, 2020, 236p
- [9] Boisard-Castelluccia S. and Van Hoorebeke D., The management of team diversity through emotional contagion, at the heart of group performance? Management & Avenir 2010/8 (n° 38), pages 240 to 256
- [10] Perrenoud P. - Building skills from school. Paris: ESF, 1997, 125 p.
- [11] Deschamp G., Horvath I., Faucheu J., What is the contribution of multidisciplinary during collective creative practices? Example of an entrepreneurship training workshop. In Entrepreneurship Review 2015/4 (Vol. 14), pages 73 to 97
- [12] Nkengne Zogang J., Evaluation by Cameroonian teachers of argumentative textual productions in French as a second language of pupils of 3rd secondary, Thes. Doct, University of Quebec at Chicoutimi in association with the University of Quebec in Montreal, 2016, 227p
- [13] WDE, Cameroon, 6th edition, 2006, Unesco-IBE (<http://www.ibe.unesco.org/>)
- [14] Lenoir Y., « Interdisciplinarity in primary education: for integrating teaching-learning processes », Tréma [Online], 54 | 2020, published on December 01, 2020, consulted on December 14, 2020. URL: <http://journals.openedition.org/trema/5952>; DOI: <https://doi.org/10.4000/trema.5952>
- [15] Georges Ngango African presence New series, African Presence Editions. 1963;47(3rd quarter):199-205 (7 pages)
- [16] Ndibnu-Messina Ethe., Search for a methodology for the teaching of national culture in primary schools in a plurilingual Cameroonian environment. Thes., Univer. Yaounde I, Fac. Arts, literature and human science, Department of African Languages and Linguistics. 2010:473. 44.

- [17] Mbarga J. The new African school: Structuring and relevance for a new Africa. Doc, GIP, Nleb Békristen, 2021;38. Yaoundé-Cameroon, ISBN No 978 9956646364
- [18] Kemayou L.R., Guebou Tadjidje F, Madiba MS, Practice of prostitution: views crossed between socioeconomic regulation and rejection of norms, In *Pensée plurielle* 2011/2 (n° 27):93-110.
- [19] Mathieu O., Young people, Cameroonians and homosexuals: report on persecutes of the other gender, *Jeune Afrique*, February 11, 2014 at 5:12 pm, updated on May 17, at 11:41 am; 2019.
- [20] Cameroon Current, “Sugar daddies” and “sugar babies”: a form of disguised high-risk prostitution, August 20. 2021;5:44. Available: <https://camerounactual.com/sugar-daddies-et-sugar-babies-une-forme-deprostitution-deguisee-a-haut-risque/>
- [21] Petit V., Tchegnina L., The issues of premarital transactional sex in Cameroonian urban areas Presses de Sciences Po |“Autrepart” 2009;1n°49:205-222 ISSN 1278-3986 ISBN 9782724631647 DOI 10.3917 / autr.049.0205 Available:<https://www.emzat.com.ng/doual-a-sugar-daddy-meet-up-rich-sugar-dadsin-cameroon/>
- [22] Tsiele C. Illegal immigration: the unnecessary risk, *Cameroun Tribune*, 08 February 2021;12:07.
- [23] Mbogo Medzogo Y. “Young Cameroonian woman seeks white husband” In *Africultures* 2005/2;(n°63):121-124
- [24] Eyenga G.M., “Cyber crime and cybersecurity in Cameroon and Africa”, Call for papers, Calenda, Published on Friday, January 29; 2021, Available: <https://calenda.org/837276>
- [25] The Jerusalem Bible, New revised and enlarged edition, Edition du Cerf, Verbum Bible, 2001, 1889p.
- [26] Warhol A. (2007) - The Philosophy of Andy Warhol: (From A to B and Back Again), 1977; French edition: My philosophy from A to B and vice versa, Flammarion (ISBN 978-2-0812-0112-5)
- [27] Citot V., Philosophical thought and scientific thought. Reciprocal indifference, multidisciplinary cohabitation or interdisciplinary commitment? Study day of April 5, 2013 – University of Rouen / ERIAC – “Philosophy and interdisciplinarity: new perspectives? », 25p.
- [28] Arcand G., Study of the role of national culture in the relationship between HRM practices and organizational performance: the case of banks in twenty-two countries in North America, Europe and Asia. Administration and management. Paul Verlaine University - Metz, 2006. French. ffNNT: 2006METZ018Lff. fftel-01777249f
- [29] Savall J., music at the service of history. <https://www.francemusique.fr/musique-classique/dossier-jordi-savall-la-musique-au-service-de-l-histoire-3424#:~:text=Fruit%20de%20la%20collaboration%20des,%27history%20of%20l%27>
- [30] Piou E., Djache Nzefa S., Taboue Nouaye F.A., and Kamga Fotso A., « Safeguarding and promoting cultural heritage in Cameroon », *La Lettre de l’OCIM*, 139 | 2012, posted on January 1, 2014, consulted on May 1, 2019. URL: <http://journals.openedition.org/ocim/1026>; DOI: 10.4000/ocim.1026

- [31] Passet R., The bioeconomic foundations of sustainable development, In: Applied Economics (Paris), 65, no 2, June 2012, p. 195-206.
- [32] Pelletier M.E., Tétreault S., Turcotte D., Ferland F., The school preparation of children from low-income families: Exploration of courses of action, International Review of Family Education 2006/2 (n° 20) , pages 109 to 146
- [33] Lenoir, Y. & Sauvé, L. (1998). Introduction. Interdisciplinarity and training in primary and secondary education: which interdisciplinarity for which training? Journal of Educational Sciences, 24(1), 3–29. <https://doi.org/10.7202/031959ar>
- [34] Genium360, Mechanical design engineer: what are the different outlets? 2017, <https://blogue.genium360.ca/article/professionnel/ingenieur-en-conception-mecanique-quels-sont-les-differents-debouchees>
- [35] Chayer D., Internship report, M.Sc. program, School of Social Work, University of Montreal, 2000. <http://www.cooperationforcesaction.com/approach.php>
- [36] Onomo Etaba R. B., Maximum Illud, by Benedict XV, and missionary work in Cameroon (1890-1935): between anticipations, applications and contradictions. African Presence Editions 2005/2 (No. 172), pages 125 to 145 <https://www.jstor.org/stable/43617474>
- [37] Verzat C., Toutain O., Training the entrepreneurial spirit at school, an opportunity to learn how to learn? Action Notebooks 2014/1 (No. 41), pages 7 to 17
- [38] Temple L., Quantification de la production et des échanges de fruits et légumes au Cameroun. Cahiers Agriculture, 2001, 10 (2), p. 87-94. <hal-0087075
- [39] FAO, soaring food prices: facts, perspectives, effects and actions required, high-level conference on world food security: The Challenges Of Climate Change And Bioenergy, HLC/08/INF/1, 2008
- [40] La Fontaine J., the fables of La Fontaine, Rue des Enfants, fables Apologue, Claude Barbin, 1668, 32p.
- [41] Le Roux De Lincy, There are no stupid jobs, there are only stupid people., 2022, <https://citation-celebre.com>
- [42] Duvvuri S., Le défi de la mondialisation : quelques réflexions du point de vue de la Banque centrale indienne. Financial Economics Review, No 107, Vol 3, 2012, pp. 249-264.
- [43] Lagrange H., Deviance and academic success in adolescence. In: Research and Forecasting, No. 88, 2007. pp. 53-70
- [44] Bomda J, manto Jonte J.J., Tanang Tchouala p, Educational guidance and access to the labor market: Case of Yaounde. UEMOA Center of Excellence, ERNWACA Research Grants Program for Educational Research / ERNWACA Research Grants Program Edition 2010, 49p.
- [45] Landry R. et Robichaud O. - Un modèle heuristique d'individualisation de l'enseignement. Dans Journal des sciences de l'éducation, vol. 11, 1985, pages 295-317.

- [46] Bergonnier-Dupuy G. et Esparbès-Pistre S. - Accompagnement familial à la scolarisation : le point de vue des père et mère d'adolescents (au collège et au lycée) ADRESE / CIRNEF | "Sciences de l'éducation - Pour la nouvelle ère". 2007/4 Vol. 40 | pages 21 à 45 ISSN 0755-9593 ISB.
- [47] Crahay E. M. et Delhaxhe A. - Analyse comparative des systèmes éducatifs. Entre universalisme et particularisme culturel, *Raisons éducatives*, n°7, 2003.
- [48] Nicholls, J.G. (1979). Development of self-perceived achievement and causal attributions for success and failure in reading. *Journal of Educational Psychology*, 71(1), 94.
- [49] Mohammed Chekour, Raja Chaali, Mohammed Laafou, Rachid Janati-idrissi, Impact of motivation theories on learning in the school context, *Interdisciplinary Research Laboratory in Pedagogical Engineering*, École Normale Supérieure de Tétouan, Morocco, 2015, EPI Association, <http://creativecommons.org/licenses/by-nd/2.0/fr/>
- [50] Patrick Bogaert, *Probabilités pour scientifiques et ingénieurs : Introduction au calcul des probabilités*, Paris, Éditions De Boeck, 2006, 387 p.
- [51] Kaze R., Cameroun : diplômés et candidats à l'immigration, une "génération sacrifiée" qui rêve d'Europe. 05/05/2015 16:32:18 - Yaoundé (AFP) - © 2015 AFP [https://www.lepoint.fr/monde/cameroun-diplomes-et-candidats-al-immigration-une-generation-sacrifiee-qui-reve-d-europe-05-05-2015-1926466\\_24.php](https://www.lepoint.fr/monde/cameroun-diplomes-et-candidats-al-immigration-une-generation-sacrifiee-qui-reve-d-europe-05-05-2015-1926466_24.php)
- [52] Tsayid G.E., Désordre urbain : il faut assassiner Yassa, 2020, *Cameroun Tribune*, 10 août 2020, 12h10
- [53] Le jour, Enseignements secondaires : La tragédie de l'enseignant camerounais, 2020, <https://actu cameroun.com/2020/03/18/enseignements-secondaires-la-tragedie-de-lenseignant-camerounais/>
- [54] Brunet S., "Hungry belly has no ears": meaning and origin of the proverb, Updated August 2, 2021, <https://www.lalanguefrancaise.com/proverbes/ventre-affame-na-point-earrings>
- [55] Le Parisien, Images: root quote on household, 2022, <https://citation-celebre.leparisien.fr/citations/49730>
- [56] Beda M., Youth, what is your mission in the development of your country? Lefaso.net, 2016, <https://lefaso.net/spip.php?article72680>
- [57] Souleymanou K., Impact of nepotism on the effectiveness of the internal control system in family SMEs in a developing economy: the case of Cameroon. University of Maroua - Cameroon, LAREGO research team, JEACC, 2016, 43p.
- [58] Descles J.P., ACCEPTANCE, ENGAGEMENT AND DISENGAGEMENT Jean-Pierre Descles Armand Colin | "French language" 2009/2 n° 162 | pages 29 to 53 ISSN 0023-8368 ISBN 9782200925703 DOI 10.3917/lf.162.0029, CAIRN.INFO, Matters for reflection.
- [59] Djakou R. and Thanon S.Y. (1986)- Ecology. Intertropical Africa. 2nd A, C, 1st C and D. Bordas. 167p.

[60] Fontaine P., What Is Science? From Philosophy To Science: The Origins Of Modern Rationality Nursing Research Association | "Research in nursing care" 2008/1 No. 92 | pages 6 to 19 ISSN 0297-2964 DOI 10.3917/rsi.092.0006, CAIRN.INFO, Matters for reflection..

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