

Competency Based Approach as A Tool of Overcoming Learner's Misconceptions on The Difficulty in The Teaching and Learning of Statistics

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Abstract: The present research is in line with the trend towards the adoption of the Competence-Based Approach (CBA) in most African countries in general and Cameroon in particular due to the fact that, Cameroon implemented nationwide started at primary schools the CBA in September 2018. Born from rising global economic and professional exigencies, the Competency-Based Approach gained momentum in the 1990s in France and in most Francophone African countries around the globe. Consequently, recruitment is based on the competencies of job seekers. Hence, it is legitimate that schools integrate this new reality so that graduates fulfill socio- professional exigencies in a timely manner. De Ketele (2001, in Hirrt, 2009, p.6) is of this view when he says: “it is indeed the socio-economic climate which has determined the notion of competency as the adults shaped by schools were not sufficiently trained to enter the work force”. In Cameroon, pedagogic methods of teaching have revolved from teaching using dogmatic method to teaching using objective method and of recent to teaching using the competency-based approach (CBA). The notion of Competency based education was introduced in French speaking African countries in 1996, but during the Conference of Ministers of Education in Yaoundé in Cameroon in July 2012 it was introduced to the Cameroon system of education.(Bernard et al, 2007), This approach (CBA) was introduced in Cameroon partly because of the failure to meet the educational expectations using —teaching by objective. Competency based approach was acclaimed as a more effective approach to teaching and learning due to its envisaged benefits in enhancing the acquisition of knowledge and competences. Overcoming learners ‘misconceptions on the difficulty in the teaching and learning of educational statistics is a necessity especially with the implementation of the new innovative approach (CBA), which is a learner centered approach. Students sometimes develop misconceptions about sub branch of mathematic called statistics because they did not understand the lesson that was taught. Educational statistics is a technical aspect educational research in universities in Cameroon and since most students have little knowledge about this course and the negative attitude they have for statistics related courses, they feel that the course is a difficult one. This research study is interested in assessing how CBA can be used in overcoming learners ‘misconceptions on the difficulties faced in the teaching and learning of educational statistics inschools. This research work is therefore of significance to students, teachers and to the educational world.

The main theories that will guide the work will be cognitive and socio constructivist theories of learning. Socio constructivist theory of learning is a product of socio cognitive activities linked to the didactic exchanges between teacher-students and

students-students. Cognitive theory stipulates that learning takes place using memory, motivation, and reasoning. The methods which will be used in collecting data are qualitative and quantitative methods, classroom observations, sampling with the use of questionnaires, key informant interviews. Data shall be analyzed via SPSS version 20. At the end of this research work, the researcher will propose strategies and methods which can be used in overcoming learners ‘misconceptions on the difficulties in the teaching and learning of educational statistics using CBA at the level of Universities.

Key Words: Competence Based Approach, Tool, Overcome Misconception in Statistics.

I. INTRODUCTION

Background of the study

Steven Hodge (2007), attempts to trace the origins of competency-based training discovered that, the societal origin is in the United States of America during the 1950s, 60s and 70s. At this time, public debate and government initiatives centered on the widely held view that there was a problem with the quality of education in the United States. One of the responses to this crisis was the performance-based teacher education movement which synthesized the theory of education that became known as competency-based training. The new innovative approach (CBA) was highly contested by educators whether it is the best approach for this era but finally the implementation of this new approach was in response to educational crisis in the United States of America. Today, CBA is widely accepted and implemented in many countries of the world such as Algeria, Australia and Tanzania. CBA was first used in the 1960s in the context of performance-based education whose purpose was to train specialist who can compete in the world market (Berkerlie et al., 2007). Competence-Based approach (CBA) is a tendency which came into being in 60-ies last century. Nowadays there are a lot of definitions of CBA. Foundation of Excellence in Education explains it as “a system of instruction where students advance to higher levels of learning when they demonstrate mastery of concepts and skills – regardless of time, place, or pace. In fact, there was a shift in the implementation of a competence-based approach in historical perspective. Several decades ago it could be really a kind of to-do-list as well as the main idea of education was centered on the providing students with narrow

disciplinary knowledge. The student was just supposed to be aware of the exact field of knowledge, i.e. the key concept of education was to learn by heart the necessary information while now it is necessary to know how to get the information, how to process it, what is the best way to implement it. Today, there are different interpretations of the concept of "competence approach", but they are all aimed at providing the learner with the skills to independently solve a set of tasks, including tasks of a personal and professional nature.

In Africa, competency-based approach was introduced in French speaking Africa countries in 1996 during the Conference of Ministers of Education in Yaoundé. After analyzing the introduction and implementation of the new curricula for primary schools based on CBA, these ministers realized that CBA was the most relevant method to enhance African education. They focus on the Mauritanian primary schools and obtained similar results as in many other African countries but these ministers realize that the greatest problem lay in implementing the curricula. The teachers faced difficulties as context of general poverty, insufficient and inadequate didactic materials and large class size amongst other all this make it difficult for teachers to create the situation needed for their lessons and individualizing instruction. They concluded that though CBA is a good approach for African schools the needs and realities of Africans are also to be taken into consideration for effective implementations of this approach.

Competence-based approach was introduced in Cameroon in July 2012. Cameroons Ministry of Basic Education had distinguished three main components of the competence to be taught: subject competence (knowledge), transversal competence (knowhow resulting from all the subjects in a child's learning) and life competence resulting from the development of the right attitudes and behavior for real life situations. Mahamat (2011) cited by Nforbi (2014) studied the implementation of CBA in some primary schools in Kousseri, Far North Region of Cameroon. He realized that the approach is not being implemented effectively due to its novelty in the educational system and the teachers 'apathy about the new visions and competences. The decree of President of Cameroon "On measures for priority development of education in Cameroon " dated by 2001 determined the number of measures for introduction the regulations in Cameroon based on competence, aimed at coordination the national system of education quality assurance with the general system of education Based on modern society requirements and the needs of learner so as to adapt to changing needs, the education quality assurance should be based on the formation such competencies and skills in future specialists that enable to use practically knowledge and skills for the benefit of all Cameroonians that creating job makers not job seekers. The president of The Republic of Cameroon His Excellency Paul Biya during his February 2001 message to the youth, called for embracing the competence based approach (République du Cameroun, 2007 In the National Standard System of Higher Education as well

professional and teachers training institutions, the requirements and qualifications are clearly stated, the list of socially and professionally important knowledge, skills and competencies is provided, which are required from the graduate of high institution not only by the national labour market, but also by the Cameroonian Community. The National System of Qualifications should be the basis for the introduction of competence-based approach in teacher's education, including its components – the National and regional qualifications limits. Concerning Cameroon, during the 1995 Educational Forum, when educational experts met in Yaoundé the capital city to discuss how the educational system in Cameroon could be improved upon, there was nothing mentioned about the use of real life aspect in the classroom especially in primary schools. The educational law No: 9/004 of 14 April 1998 does not make mention of in the primary school curriculum but as 2001 the education community had to embarrass competence-based approach so as to create job makers not job seekers. In his speech, he promised the introduction of competencies our schools and the equipment of computer rooms to schools. The consequence of the President speech was accelerated in 2015, with the introduction of competence-based approach in primary and in secondary in both general and technical secondary schools.

The National qualifications limits are implemented in order to:

- ❖ introduction of Cameroon educational standards and principles of education quality assurance with the requirements of the job market competencies to professionals;
- ❖ ensure harmonization of standards of legislation in the field of education and social, job relations;
- ❖ promote national and international recognition of qualifications acquired in Cameroon;
- ❖ Establish the effective cooperation of sphere of educational services and the labour as well as job market.

Knowledge acquire should be in Conformity of the quality of graduates' training of teachers training colleges with the requirements of standard of higher education is determined by social and personal, general scientific competencies, instrumental competencies and professional competencies.

The idea of competence-based approach in teaching was originated in the early 80th of the last century, the concept of CBA was published in an article known as minimum competency Perspectives. This was corroborated by Bernard et al (2007), who hold that most teachers continue to use the explanation methods and display poor mastery of the CBA method. In addition, large class sizes and insufficient didactic materials impede the individualization of instruction and evaluation seriously.

Implementing competency- based approach (CBA) is an important issue in the Cameroon education system. Some of

the teachers and students mainly the novices are not fully implementing the approach probably because they are unaware of its principles. The approach focuses on outputs rather than on inputs to learning. CBA addresses what learners are expected to do in a class situation, how learner can use acquired knowledge to solve real life situations. It is in this light that we felt a need to investigate on how to overcome learners 'misconceptions and asses how competency-based approach can be used in overcoming learners 'misconceptions since the new innovative approach is centered on the learner and learning outcomes. The basic principle is that competences can be acquired from a variety of sources and can be assessed by persons other than the student's current teachers, as long as it can be ascertained through memorandums of understanding and learning agreements that the learning outcomes and competence assessment methods correspond to the national qualification requirement.

We believe that the best solution here lies in the sphere of combination of approaches, as far as the competence approach is a set of general principles for determining the goals of education, selecting the content of education, organization of the educational process, and evaluating of educational outcomes.

Statement of the problem

Following the dogmatic and objective methods of teaching, students have developed misconceptions on the difficulty in the learning some concepts statistics. It is always common to hear students declare that statistics is very difficult; that it is more of a science subject and good for science students. This is often confirming by the Unsatisfactory results or poor performance in some concepts in the course, absenting from those classes. These are pointers to the difficulties learners face to assimilate some phenomena in statistics since they have the misconception that it good for science-oriented students. Some teachers do not have enough didactic materials and the good mastering of the course to facilitate learners understanding of the phenomenon that most students shy away from learning the course. This was partly because students were expected to wait for information from their teachers and to follow the directives on what to do with that information. Emphasis was placed more on repeating information without reflecting on the outcome of such information or demonstrating an understanding of the usefulness of such information since the aim was to obtain better examination results, rather than mastery of skills and practical application of the lesson taught. Often, these results merely reflected the reproduction of the material taught. This results to surface processing instead of deeper learning, thus learners quickly forget the explanations after the lesson is over and upon writing their examinations.

At time Students are treated like empty vessels which should be filled with knowledge to obtained better examination results. Some teachers thought that the aim of learning is that students should be able to pass examinations. Memorization

was very common amongst students who easily forgot what they learnt after writing the examination. When this happens; students often believe that they have forgotten what was taught in class because the lesson was difficult to assimilate. But following the role of the CBA, students are supposed to develop skills, and to use the knowledge they acquire in class to solve real life problems. The approach demands that students need to be actively involved in the process of knowledge construction. Since this innovative approach is not a teacher-centered approach, it is envisaged that CBA can easily be used in overcoming learners 'misconceptions on the difficulty in teaching and learning of some technical concepts in statistics which are apparently difficult for learners and even for some teachers. Because of the above the study will provide a base to investigate the reasons for these misconceptions and to find ways of overcoming them in order to facilitate learners understanding it is in this regard that this work explores the possibility of using the CBA to overcome observed misconceptions.

Objective of the Research

This research work seeks to accomplish the following objectives:

The main objective is to assess how CBA can be use in overcoming learners 'misconceptions on the difficulties faced in the teaching and learning of statistics in university

Specific objectives

1. To identify causes of learners 'misconceptions and difficulties faced in the learning statistics among level 2 students
2. To examine how teacher's strategies and devotion in using CBA can aid in overcoming learner's misconceptions on the difficult in the teaching and learning of statistics
3. To assess how the modes and effects of interactions between student-student, student-teacher and student-knowledge can aid in overcoming learners 'misconceptions on difficulty in the teaching and learning of statistics

Hypotheses

There are strategies and methods which can be used in overcoming Learners 'misconceptions on the difficulties faced in the teaching and learning of statistics using the CBA

Specific Hypotheses

- H1:* There are reasons for learners 'misconceptions and difficulties faced in grasping lessons on statistics.
- H2:* Teachers strategies, methods and devotion in using CBA can aid in overcoming learners 'misconceptions on the difficulty in the teaching and learning of statistics.
- H3:* There are modes and effects of interactions between student-student, student-teacher and student-

knowledge which can help in overcoming learners' misconceptions on the difficulty in the teaching and learning of statistics.

Justification of the Study

For the past years most students had been influenced either by their own thinking or by others to believe that Statistics especially for non-science-oriented learners are more difficult and that it is more of a science subject. As a result, they do not spend time reading and solving it and fail to attend all the classes because they believe it is difficult to understand and difficult to have good pass mark in this course. This wrong conception is perceived the university level. With the competency-based approach (CBA), students are at the center of learning. If this new approach is properly implemented, it will go a long way to overcome learners' misconceptions on difficulties in teaching and learning of some concepts in statistics which seem complex and abstract for students to properly understand.

This piece work therefore seeks to identify and examine strategies which can provide conducive atmosphere for learners such that they can easily adapt to the new innovative approach, which focuses on learner and the learning outcomes. There were lapses with dogmatic method of teaching, teaching by objectives thus the implementations of the CBA in education. These justify the reason and the necessity for the implementation of the competency-based approach as a medium in overcoming learners' misconceptions on the difficulty in the teaching and learning of statistics.

Pedagogic approach to teaching since 1960s has been evolving for better results, from dogmatic approach of teaching, to teaching by objective and competency-based approach which was introduced in July 2012. Although CBA is not properly mastered by most teachers in Cameroon, the implementers 'acclaimed it as a better approach in teaching learning process because of its envisaged benefits in the education system. In the past years most student has develop misconception in the teaching and learning of some concepts in statistics which at times even teachers face difficulties in properly explaining them for student to effectively grasp the essential knowledge. This study therefore seeks to assess the strategies which can be use in overcoming learners' misconception on the difficulty in the teaching and learning statistics given the fact that it is a learner-centered approach. Learners are now given the opportunity to construct their own knowledge themselves. Also, since CBA is a socio construction approach base on training students to constructs their own knowledge to be able to use it in their daily life. Learner take an active role in their learning which involve more and can contribute to higher motivation because it can hold their interest and build self-esteem (Khalean et al 2014). Teachers are no longer the persons who know everything but rather, the teacher is simply a guard, facilitator and a resource person in the knowledge construction by the learner. According to the pedagogic triangle develop by Jean

Houssay, students are supposing collaborate with their teachers in the process of knowledge construction by the learner in such a way that, the teacher can give a problem to the learner to resolve, where the learner cannot resolve, the learner comes back to the teacher for remediation. The learner is also supposed to spend constructing her knowledge and where she cannot understand or carryout on her own, she returns to the teacher for remediation. Therefore the research study titled using competency based approach in overcoming learners' misconception on the difficulty in the teaching and learning of statistics is a necessity in the proper implementation of the competency based approach. Research has proven that new ideas cannot be grasps as far as contrary ideas is imbibe in mind. Learners therefore need to be optimistic and determine because they will be accountable for their education since they have a great role to play as far as learning using the CBA is concern. Changes are often needed in the teacher's role and in the educational institution's operational culture. The changes in teacher's work depend on how the teacher's role and work have been structured. The teacher will be needed as before, but the starting point of teaching and assessment will be the achievement and support of competencies. Instead of the teaching required by the credit system, the emphasis is on the teaching and guidance needed by the student in support of the acquisition of competences. This includes the opportunity to utilize open learning environments and educational technology. Skilled education providers, teachers and other staff will join forces to implement the change.

Furthermore, this work was prompted after careful examination of learners' behavior vis aavisostatistics. Since the introduction of dogmatic method in education in the 1880s to teaching by objectives around the 1910 up to 2014, when the CBA was introduced, most student often believe that some concepts in statistics is too difficult to understand. This altitude is manifesting in different ways. This is partly because of the approach which was used at that period. The teacher was at the center of learning process, and learners were not given enough opportunity to express themselves or construct their knowledge. When competency-based approach was introduced in 2014, the researcher though that, this new innovative method can be used in overcoming learner's misconceptions on the difficulty in the teaching and learning of statistics. This is because CBA is an approach that revolves around three main concepts which are competence, problem solving and transfer of knowledge. A problem-solving situation in this case is a problem to resolve. Transfer of knowledge here refers to the application of knowledge acquired in one situation to new situation; this is one of the main objectives of CBA. It is because of this that advocate of CBA urges teachers to place learners in front of problems to reflect on. In the face of a situation, learners use their acquired knowledge to look for solution and this will result to the construction of knowledge, Boududa 2017 cited in Faiza 2007. Learners now can take active part in their education, develop skills and be accountable for their education.

Furthermore, CBA is centered on learner and because of this the researcher concluded that the misconceptions students often develops due to the difficulties they encountered in the teaching and learning of plate tectonics in Form three can be overcome using CBA. Few researchers have done finding on learners' misconception. Baobuda (2012) carried out research on the implementation of the CBA in teaching writing; Nfobi (2013) carried research study on the perspectives of CBA with entry through real life situation in the teaching of English language. This present study is seeking to assess how CBA can be use in overcoming learners' misconceptions on the difficulty in the teaching and learning of statistics in Cameroon universities.

II. REVIEW OF LITERATURE

This part on literature review will present a general view, opinion and its results, suggestion pertaining to other field and which is related to our research on competency-based approach. Review furnishes the researcher with important information regarding a specific problem (MUKUBE, 2016). Literature review is as follows:

Competency Based Approach

Richards and Schmidt (2002), defines the competence as action which includes a person's ability to create and understand sentences, including sentences they have never heard before, knowledge of what are and what are not sentences of a particular language, and the ability to recognize ambiguous and deviant sentences. A competency involves the necessary knowledge and capacities that a given solution requires. The QEP (Quebec Education Programme) defines a competency as a set of behaviors based on the successful mobilization and use of a series of resources. Set of behaviors refers to the capacity to use correctly a variety of resources, both inside and outside learning acquired in school or in daily life. The concept of resources refers not only to everything that students have learned at school, but also to their experiences, skills, interests, etc. Students may rely on many outside resources, such as their colleagues, their teacher, certification, etc.

competency-based approach includes an assessment of learners' needs, selection of competencies based on those needs, instruction targeted on meeting those needs, and evaluation of learners' performance in meeting the competencies. Definition of De Ketele's (1996), the CBA differs from content-based teaching programs (i.e. time based programs) which are based on "specific objective" to reach. In detail it spells out of inside of the course in terms of knowledge to be acquired to do activities following to this content, and most of all the situations in which these activities work. The teacher should put the pupil in situations of interaction where he demonstrates a capacity for oral interaction even if he uses fail strategies to do this task to make the student more active and develop his skills. surveillance of by the teacher of the learner's behavior during the performance of this task is very significant to check

whether the competency to interact orally has been installed, if he uses his mother tongue the teacher should reconstruct similar situations until the learner gets the feeling that he has achieved something in the foreign language. (test are giving sometimes to determine the input of the pupil and marks are giving in order to check scores which are compared to check his progress.

BoudoudaSamia et al (2012), studied the problems facing teachers in implementing the competency-based... approach in teaching writing, He focused on three main points in the teaching process. The situation of teaching and learning under the competency-based approach in secondary school classes, the main problems that teachers face in teaching writing under this approach to secondary school students. His findings on the problems teachers face in implementing CBA will guide our work on using CBA in overcoming learners' misconceptions on the difficulty in the teaching and learning of statistics. Luambano Sophia (2014), carried out a study on the implementation of constructivist approach in competency-based curriculum. His findings reveal that students were not aware of competency-based approach whereas teachers were aware of it, however most teachers seem not to implement the approach due to various inhibiting factors such as inadequate teaching and learning materials like books; poor or low level of language proficiency on the part of some teachers and most students. It was also found that lecturing-method is a dominant teaching technique used in schools. It was further found that seminars were no organized for teacher which could improve the teaching learning situation; as a result, old approaches of learning were still used by most teachers. The study recommends that; there is a need for regular in-service training for teachers after completion of their studies to enable them to implement the curriculum and enable students to apply the new knowledge. From observations, teachers can read and make research on how to use CBA. The changes in teacher's work depend on how the teacher's role and work have been structured. The teacher will be needed as before, but the starting point of teaching and assessment will be the achievement and support of competencies. Instead of the teaching required by the credit system, the emphasis is on the teaching and guidance needed by the student in support of the acquisition of competences. This includes the opportunity to utilize open learning environments and educational technology. Skilled education providers, teachers and other staff will join forces to implement the change. Students will also encounter changes. They will transfer from subject-based studying to the acquisition of competences and demonstration of learning outcomes. This change will also entail new concepts, such as qualification units, competence points, competences, learning outcomes and acquisition of learning outcomes, as well as student financial aid based on competence points instead of time. This will usher then teach using the new innovative method with no hindrances especially in the absence of a regular in-service training program. Therefore, teachers should be creative and engage themselves in doing everything necessary for the proper

implementation of the new innovative approach considering the fact that a problem known is a problem resolve. Nobert Michel et al (2009), carried out an empirical research on active and passive teaching styles on students learning outcomes. This study compares the impact of an active teaching approach and a passive teaching method on student cognitive outcomes. Across two sections of an introductory business course, one class was taught in an active manner, with a variety of active learning exercises. The second class was taught in a passive manner, with emphasis on daily lectures. Although the active learning approach does not appear to have improved overall mastery of the subject, they gathered evidence that it can lead to improved cognitive outcomes within a class than the passive teaching methods. It should be noted that CBA was acclaimed as the best due to its envisage benefits. CBA was introduced more than 30 years today therefore it must be implements despite its shortcoming since most researchers criticize the new innovative approach for necessary recommendations. Steve Hodge (2007) carried out research about the origin of competency-based training. He attempts to trace theoretical origin of competency-based training. His work makes a distinction between societal and theoretical origins and he argues that competency-based training had its societal origins in the United State of America during the 1950s, 60s and 70s. Public debate and government initiatives centered on the widely held view that there was problem with the quality of education in the United States of America. One of the responses to this crisis is the performance-based teachers 'education movement which synthesized the theory of education that became known as competency-based training. The theoretical origins of competency-based training are derived principally from behaviorism and systems theory. These are two broad theoretical orientations that influenced educational debate in the United State of America during the formative period of competency-based training. Most of the component parts of competency-based training were contributed by specialists in one or both of these theoretical orientations. However, Brudy in 1972 believe that performance-based teachers 'educational movement was a response to social pressure and an attempt to cope with certain societal condition rather than being the outcome of a purely scientific facts. Tulegenovna Aimzhan (2015), carried out research on theory and practice of competency-based approach in education. His interest was using the conceptual content and structure of competence and competencies in different countries. The problem of professional competence is analyzed using the example of the United States, Russia and Kazakhstan. He emphasizes on increasing requirements to young specialists for innovations due global demands in the educational world. It is because of the increasing demand in the educational world that necessitate this research study title using competency-based approach in overcoming learners misconception on the difficulty in the teaching and learning of plate tectonics in Form three. The researcher envisages that, results from this study will be a solution to some of the problems encountered in using Competency Based approach

(CBA) is a structured approach to learning and assessment that is directed toward achieving specific purpose for the good of the learner. It is about assisting individuals to acquire skills and knowledge with a view to performing a task to a specified standard under certain conditions (Harris, & Hodge, 2012). In CBA, the product to be achieved are clearly stated so that learners know exactly what they have to be able to do, learners know what learning is to be provided and organizations know the skill levels required of their learners. The emphasis is competency-based learning is on "performing" rather than just "knowing". Competency according to Dubois and Rothwell (2004), is defined in terms of what a person is required to do (performance), under what conditions it is to be done (conditions) and how well it is to be done (standards). Competency based learning promotes education and facilitate institutions for the world of work (Klein-Collins, 2013). ng the new innovative approach, because a problem known is a problem solve.

Yelena B, (2015) studied the history of competency-based approach in education. His findings provide a historical review which describes the implementation of competence-oriented education. The author traces the several stages of its formation and describes the characteristic features; starting with the very first application of the competency-based approach within the linguistic education, proceeding to the next stages of acknowledgment and integration in other fields. Finally, after discussing the purpose, goals and influences of the competency-based education; the author makes an attempt to uncover the need of introducing the competency-based approach in all fields of education. His results from his findings explains why young researchers cannot consider the idea or the findings of SamiaBoudoua (2012) who holds that, proper implementations of competency-based approach will have encountered enormous obstacles and he did not propose measures to curb these limitations. This is probably because he did not traced the history, stages and steps of CBA as Yelena did before arriving at the conclusion that there is need to introduce competency based approach in all fields of education. The followers of SamiaBoudoua need read the origins and stages of CBA in order to be informing about the implementations of CBA in the different countries of the world.

Nforbi Emmanuel (2012), carried out a research on the perspectives for the Competence based approach with entry through real life situations in the teaching of English in Cameroonian francophone secondary schools. They discovered that the teacher faces challenges in the field in terms of understanding the method, lesson planning, delivery and evaluation. In addition, the teacher faced difficulties such as general poverty, insufficient and inadequate didactic materials, overcrowded classes etcetera, which makes it difficult for the teacher to create the situation needed for his lesson and for individualizing instruction. They proposed some measures to help teachers in the new syllabus and method. Their finding focuses on some of the problems that result in students 'misconceptions. Therefore, students need

to be aware of the situation and be advised to be optimistic. In addition, there is a solution to every known problem. Educational stakeholders can work in synergy to provide lasting solutions to challenges encountered using the new innovative method, the competency-based approach.

The new approach to education increases the need to professionalize the act of teaching. The reform of the education system introduces several elements that will affect the role of teachers and the nature and significance of the competencies required to teach. Briefly, these elements are: increased autonomy for schools, an approach to learning that places the student at the heart of the learning process, a competency-based approach to program design, a range of options of varying duration, and the policy of adapting schools to the needs of all students, whether children or adults.

Today, the increased autonomy of vocational education centers and the active involvement of teaching staff in governing boards mean that their pedagogical action now extends beyond the classroom and requires teachers to work as part of a team. Their professional expertise is required at several levels in the provision of educational services.

Competency-based programs of study, and the map of options, require teachers to perform some tasks differently and to develop new competencies. Teamwork with colleagues who come into contact with the students in the program or teach other subjects will become especially important in developing, integrating and evaluating competencies over periods ranging from a few days to the length of an entire program.

The new social and educational context requires recognition for the interactive nature of teaching work (Tardif and Lessard 1999). Teachers do not work with inert materials but with living subjects and social cases. Students today are no longer docile beings subjected to the teachers' authority; they resist the teachers' influence, and always want to do something else, or do it differently or at another time: The teachers' knowledge no longer, in the eyes of students of whatever age, gives him or her an unconditional right to exercise intellectual authority and obtain their attention, trust and obedience. Dislodged from their pedestal, teachers must, day after day, earn the credit and influence they formerly enjoyed automatically (Joxe quoted in Lang 1999: 129; our translation).

Principles of Competency Based Approach

The key idea of Competency-Based Approach can be described as providing student with knowledge and skills of applying it. The definitions of Competency-based approach vary in different parts of the world. The present paper regards the meanings of the term Competency – Based Education and describes the example of implementation of this approach. Competence-Based Approach (CBA) is a tendency which came into being in last 60TH century. But in Nowadays there are a lot of definitions of CBA. Foundation of Excellence in

Education explains it as “a system of instruction where students advance to higher levels of learning when they demonstrate mastery of concepts and skills – regardless of time, place, or pace. Competency based training was introduced in the 1980s in Australia as part of broader industry restructuring to increase Australia's completeness in an increasingly globalized economy (Goozee, 2001; 62). CBA was introduced in Vocational Education and Technical (VET) in Australia by a Labour government as part of broader reforms to all sectors of education through seeking to subordinate education to economic needs and to align “skill” development with the “needs” of the economy. Various appellations such as Competency Based Approach (CBA), also known as Competency Based Education (CBE), Competency Based Learning (CBL), Pedagogy of Integration, Performance Based Approach, Proficiency Based Approach, Mastery Based Approach or an Outcome Approach is associated with this new pedagogy (Ntongieh, 2016). Recent education reform introduced competence-based approach in secondary schools. This reform is prompted by the need to produce school leavers with capabilities in terms of knowledge, skills and attitudes useful for solving social and economic challenges of present society, (2015; Nforbi and Siéwoué, 2015; Butova, 2015; Ntongieh, 2016). Competence-Based Education (CBE) is perceived to be desirable for aligning education provided to the dynamic social and economic demands of the society. It appears to be a panacea to the concerns raised about the capability and employability of the secondary school graduates as it emphasizes on the acquisition of knowledge, skills, attitudes and behaviors essential for effective performance of real world tasks. The introduction of competence-based approach in secondary schools calls for comprehensive change in instructional approach in terms of teaching and learning as well as resources used (Paulo and Tilya 2014). The revision process involves shift in paradigm from content-based to competence-based. The emphasis on competence-based education is due to the growing recognition of the need for development of capabilities and not just certification.

This means that teaching and learning process must change its orientation from rote memorization of content knowledge to acquisition of skills and competencies useful for solving real life problems (Woods, 2008; World Bank, 2011). CBE buttresses the application of knowledge in real life context as opposed to the content-based emphasizing students to memorize their lesson notes which was deemed crucial for passing examination, which often tests ability to recall memorized facts, knowledge and principles (Osaki, 2004).

Currently, competence-based education programs are characterized by learner-centered constructivist approaches to teaching and learning. Constructivism is based on the view that knowledge and skills are not products that can be transferred from teacher to learner; rather, they are the result of learning activities done by learners themselves, either individually or in groups (Tuxworth, 2011). However, CBA is a way of approaching learners' vocational need that places

primary emphasis on what a person can do as a result of learning (the product), and as such represents a shift from the emphasis on the process involved in learning (the inputs). It is concerned with learning of specific standards rather than on individual's achievement relative to others in the group (Kuh et al, 2014), that is

CBA = DIY = Do it yourself = Knowledge + Skills + Attitudes + personality traits, Because of this Jones and Voorhees (2002), published some basic principles of CBA which include:

- *Student Centered*: The student as the active player generates the learning goals and is responsible for his or her own learning activities in terms of time and rate. The lecturer as a coach guides the students to develop these competencies.
- *Task Based*: - Learning activities are directed toward performing the professional task. This ensures active learning instead of passive learning.
- *Competence Oriented*: Learning task are formulated to develop competencies that are needed to perform the professional task of the student's future working environment.

Characteristics of Competency Based Approach

For competence-based learning to be accomplished the following key characteristics must be taken into consideration which are: -Competency based learning focuses on the learner as an individual as a result it provides opportunities for each learner to develop skills at their own pace, collaborate with others, collect evidence of learning and become successful lifelong learners CBA empowers learners to:-

- Critical thinking, reasoning Reflection and action
- Flexible time-frames allow learners to work at their own pace. Comment and input from the wider community and stakeholders is encouraged.
- Understand the competencies they need to master to achieve their goals.
- Progress through learning process without time constraint.
- Explore diverse learning opportunities.
- Collaborate in learning activities with countries of peers and mentors.
- Create learning artifacts that represents their competencies.
- Reflect on their own learning or training achievement
- Learners are active partners in the learning process; they are responsible and productive.
- Learners deduce meaning.
- Learners research information for project outside of classroom.
- Most interaction is learner to learner through pair and small group work.

- Learners have greater responsibility in deciding what they will do and how they will do it.
- Assessment is shared between teacher and learners. That is, there is more self-and peer-assessment. And that assessment is for the product/ the result and for the process, how that result was obtained.
- Learners acquire skills to use and apply knowledge about language, not only language skills but also social skills, research skills, critical thinking and decision-making skills, computer skills.

Approaches of CBA

Norland and Pruett-Said (2006) suggest which make the competency-based approach different from the other approaches are:

- The teacher conducts a needs assessment to see how and where students will need to use subject to be successful in the future.
- The teacher defines tasks, or competencies, that students will need to accomplish. Examples of competencies might include requesting and giving personal information, asking for the time, practicing transactions in the post office, and making a doctor's appointment.
- The teacher creates lessons and activities that will teach students how to accomplish the tasks, or competencies, that have been prescribed. Lessons might include new vocabulary, understanding and practicing dialogues, reading and filling out forms, and discussing previous experiences and future problems that might occur.
- Students are evaluated on their ability to perform the designated task or competency.

According to Norland and Pruett. Competency Based Approach, and the program is to be centered on the pupil and on construction his/ her knowledge. It aims at making him / her needs within and outside school. This program will help pupils learn how to listen, read and reuse what he knows in original and new situations. This approach is intended to take candidate assessment out of the realm of subjective evaluation and place it squarely under the realm of science.

Learners' Misconceptions

Students' misconceptions and beliefs regarding statistics deserve attention for three reasons:

- ❖ Their role in influencing the teaching/learning process (process considerations);
- ❖ Their role in influencing students' statistical behavior after they leave the classroom (outcome considerations),
- ❖ Their role in influencing whether or not students will choose to enroll in a statistics course later on, beyond their first encounter with statistics (access considerations).

The creation of a problem-solving environment for learning statistics requires teachers at all levels to build an emotionally and cognitively supportive atmosphere where students feel safe to explore, conjecture, hypothesize and brainstorm and are not afraid to experiment with applying different (statistical) tools and methods, feel comfortable with temporary confusion or a state of inconclusive results as well as the uncertainty inherent in statistical and probabilistic situations, believe in their ability to navigate or “muddle through” intermediate stages, temporary roadblocks, and the decisions needed to reach a certain goal; and are motivated to struggle with and keep working on tasks or problems which may require extended investment of energy. However, many students are not ready to embrace and function within a problem-solving oriented learning environment in statistics education. Part of this lack of readiness is due to the attitudes they carry from their experiences with mathematics (and mathematics teachers). Statistics teachers should be able to assess and monitor students’ feelings and ideas, so as to make sure all students either have or develop the dispositions described above and require. Most students take a first (introductory) course in statistics either at the precollege level, or as a “terminal” elective or compulsory course at the college or graduate level, i.e., they will not have to take another course unless they wish to

Sometimes, learners develop misconception because they did not understand the lesson taught, from there, they just conclude that the lesson is a difficult one. According to the pedagogic triangle developed by Jean Houssaye there exist three pedagogic relations. Teaching process relation, this shows the relationship between learner and knowledge. Here, the teacher is the organizer of the external learning process. He is the mediator and there should be a stronger bond between the learner and knowledge. He emphasizes on the fact that learners must spend time with knowledge. This means that learners need to create an individual time during which the learner will carry out his or her own research about a particular lesson, the learner must spend time to read his or her book. Where the learner has difficulties ‘in understanding, the learners must go to the teacher for mediation, since the teacher is a mediator. Jean Houssay also brings out the training process; the relation is between teacher learners. According to Jean Houssay, the teaching situation can be defined as a triangle comprising three elements: knowledge, teacher and learner. All education is based on a special relationship between two of these three elements and the exclusion of the third with which each of the chosen elements must maintain contact. There are three processes: the first is the “teaching process”, which prioritizes the teacher-knowledge relationship; the second process is the “formatting process”, which prioritizes the teacher-learner relationship and finally the “learning process”, which prioritizes the learner-knowledge relationship. In order to change his pedagogical approach, the teacher needs to change his or her basic process, that is to say, the basic paradigm.

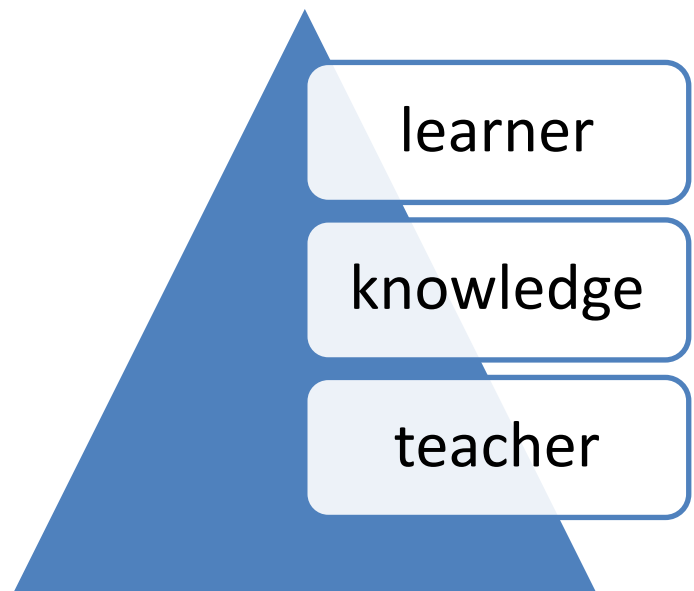


Fig 2: Houssay’s educational or pedagogy triangle

Each of these psychological postures corresponds to a practical pedagogical experience and a different perception of the relationship between knowledge, teacher and learners. The pedagogical triangle is a system of explanatory reference, which bases the relationship between three areas: learners, teachers and knowledge. It is a reflexive support for pedagogical situations where the learner is face to face with the teacher in the same place and at the same time (Figure 3). This triangle is essentially based on three pedagogic relations:

The Teaching Process

Since the role of the teacher and the context of teaching have changed, new resources (knowledge, skills, attitudes) are required to practice the profession. Certification in a given trade is no longer the sole qualification needed in order to be considered competent to teach. To qualify, teachers must acquire the more complex competencies that underlie the new professionalism of the teaching profession. The key roles for teachers as facilitators to support students in constructivist learning environment are: modelling, coaching, scaffolding, modelling and coaching both imply actions by the teacher that provide instruction, so the teacher in the constructivist classroom will often be providing models of knowledge and skills. The teacher as guide, as guide implies, is assisting the student as they create their learning journey. Scaffolding, however, is a more complex teaching behavior. We all create mental schemas by which to organize, store and recall information. The broader our schema, the more we can learn and the more easily we are able to do so. As teachers, we inevitably introduce schemas as a plan or a structure that provides students with an organized framework to accommodate knowledge. The point of scaffolding from a constructivist perspective is not to impose our schema on them, since if it is not meaningful for them it is unlikely to be useful, but to assist them in building or extending their own

schema by scaffolding around their existing experience and understanding.

According to the Houssaye's diagram, if the teacher is on the Teacher-Knowledge side of the triangle, this indicates that the relationship with knowledge is more important for the teacher than the relationship with the learner. For this kind of teacher, to teach is to transmit knowledge. 'Teaching' is implicitly to build knowledge. The learner learns through such transmission. The teacher is an expert who possesses knowledge. He or she transmits this knowledge to the learner didactically, and the emphasis is on the teacher's activity rather than on that of the learner. The learner takes notes and supplements the teaching by reading, seeking additional information, carrying out practical exercises or doing case studies. Teachers' mathematics knowledge plays a significant role in the quality of their teaching since many activities of teachers, such as "figuring out what students know; choosing and managing representations of mathematical ideas; selecting and modifying textbooks; deciding among alternative courses of action" involve mathematical reasoning and thinking (Ball et al., 2001, p. 453) The teacher is the person who holds the knowledge on the basis of his or her institutional status, which in turn relates to his or her qualifications and the selection procedures for the post. Consequently, teachers' beliefs, pedagogical content knowledge and instructional decisions are dependent on teachers' statistical knowledge. Below we describe different research that show that many teachers, particularly primary school teachers, unconsciously harbour a variety of probabilistic and statistical difficulties and errors that might be shared with students. According to the triangle, the teacher-knowledge side is typified by 'lecturing'. It is still the case today that university education is generally characterized by lecturing. Lecturing offers the 'administrative' convenience of making it possible to assemble numerous learners to form a single class. Lectures also offer teachers the possibility of delivering large quantities of information efficiently. On the one hand, it is a solution that is economically efficient and reassuring for the teacher, who is in complete control of events and, on the other, the learners are perfectly familiar with this type of teaching. This is therefore a process in which learners are passive. There are 'modernized' versions of lecturing, involving the transmission of the equivalent of a study course on audio or videocassette, television, CD, and generally content recorded on digital media. As is the case for a traditional course, the learner listens passively and takes notes. In this traditional setting, the 'new technologies' serve only to give a more modern appearance to a practice that has not fundamentally changed. They merely reinforce the traditional lecture approach. The relationship privileged here is the teacher-knowledge relationship. The teacher structures lessons for the learner. He looks for the content.

Teacher Approach to Learner

Teachers are expected to use a variety of teaching strategies and resources that involve the learner, Learners are expected to be active and participate during lesson so as to construct knowledge, skills and attitudes. Piaget (1970) holds that the learner should play active role in learning. To him, knowledge construction takes place when new knowledge is actively assimilated and accommodated into existing knowledge. With the CBA, the teacher is supposed to switch from the role of an expert who transfers knowledge to a coaching role, facilitating and guiding learning process (Biemans et al., 2004). Adjibi, Attikleme (2017) hold that in competency based curriculum; skills are not taught but are built.

Teachers are expected to use authentic assessment methods such as portfolios, classroom or field observation, projects, oral presentations, self-assessment, interviews and peer-assessment. Authentic assessment methods are more useful for competence-based curriculum than other forms of assessment because they provide opportunity for students to demonstrate the competencies they have mastered in real life or analogous situation. More importantly, teachers are required to change from norm referenced to criterion referenced judgment of learners' capabilities or competencies as supported by Kouwenhoven (2013) who argued that in competence-based education, performance assessment is carried out by giving the learner a clearly defined task and a list of explicit criteria for assessing the performance or product. Criteria are often given in the form of rubrics that can be either analytic (specification of parts) or holistic (Paulo and Tilya, 2014). In addition, a more formative assessment process done formally and informally before, during and after the learning process is usually advocated in competence-based education programs (Mulder, 2004). It is focused on both subject specific competences and key competences using authentic assessment methods and not conventional paper and pencil tests usually implored in content-based curriculum assessment. Authentic assessments engage students in tasks similar in form to the tasks in which students will engage in their life outside the classroom and probes for students' higher-order skills such as critical thinking and problem solving (Kouwenhoven, 2013). Further, assessment practice emphasizes on the provision of feedback which continuously, timely and constructively inform learners about the strength and weakness of their performance. Feedback is normally descriptive, directly linked to learning goals and pin point needs of improvement and how to improve (Kitta&Tilya, 2010). Another important feature of assessment is that it should align with the curriculum which, in turn, is aligned to the standards, and that they measure learning in terms of how students perform, using as much as possible, a real-world situation. Another characteristic of competency-based education is that it measures learning rather than time. Students' progress by demonstrating their competence, which means they prove that they have mastered the knowledge and skills (competences) required for a particular course, regardless of how long it

takes. Competency-based learning allows us to hold learning constant and let time vary. This concurs with mastery learning theory (O'Sullivan and Burce, 2014). The psychology of individual differences is recognized in CBA. Different individuals have different learning styles and strategies; they take different amount of time to learn the same content. The main objective of the competency approach to education is not ranking the students but teaching them to achieve their goals. The implementation of CBA in secondary schools is carried out sequentially. Sequential evaluation is generally formative, reason being that learners who do not demonstrate mastery of expected competences are given remedial lessons to enable them attain the expected competences while those who have developed the competences required are assigned enrichment activities. Formative evaluation and remediation is expected to be conducted repeatedly to permit learners develop competences. The same instruction is given at different times until learners acquire competences associated with the unit.

- Teachers should Pose genuine problems that are or will be relevant to the students. Questions and activities, you develop with and for your students should be of relevance to their current schema and developmental abilities.
- Structure learning around essential concepts in the curriculum. Students understand and make meaning by breaking wholes into parts. For example, young story writers can approach the concept of telling a story through discovery activities. These might include creating a class library of illustrated storybooks, a visit by a storyteller, discussion of students' schemas addressing concepts and experiences of 'story' and so on. Depending on your students' prior learning, you might introduce narrative sequencing through visuals, provide students with opportunities to rearrange parts of a known story or even digitized video material they have referred to in the past.
- Be aware that students' points of view are windows into their reasoning. Learning through self-construction may feel threatening for some students, particularly if they have been schooled on a diet of direct instruction, and many students struggle to analyze and articulate that analysis in group discussions. Remember that it might take time for students to articulate their points of view, and that they need different kinds of opportunity to elaborate and explain. The construction of knowledge calls not only for time to reflect but also time to practice explaining. The many opportunities to explain what they're doing help them understand what they are learning.
- Adapt the curriculum to match your students' current schema and developmental abilities. Start your preparation by identifying the kinds of activities you predict will most likely be

developmentally appropriate for them. Most high school students, for example, would find the preparation of a film script or a legal brief more engaging and relevant than the report format they mastered in sixth grade. Role plays are also interesting ways for students to present information.

- Teachers Assess student learning in the context of your teaching. The key pedagogical shift is to understand that assessment does not simply measure your students' knowledge and skills, although good assessment certainly does that, but also identifies how much and what kind of help a student needs to be successful.

The new conception of learning that gives students primary responsibility in the learning process requires teachers to use new pedagogical approaches and ways of dealing with students. Teachers must adapt their teaching methods to the rate of progress of each student; they must focus on student-learners in order to redefine their relationship to knowledge and facilitate its acquisition.

The Learning Process

Today, the labor market dictates to education system what level of specialists' knowledge it needs. And competence-based approach is an attempt to bring in line the professional education and the requirements of employers. Competence-based approach suggests that the significant results of education are recognized outside the education system. Whereas in the teaching process the authority in charge of the education organizes the transmission of knowledge, is the possessor of knowledge of the discipline and the knowledge taught, the learning process is founded on a special relationship between knowledge and learner. One fundamental learning experience that teachers should have to develop their statistical thinking is working with statistical investigations or projects in order to develop sufficient statistical thinking abilities, deep understanding of disciplinary content, and the ability to copying with ambiguity and uncertainty. This process is based on the idea that people learn in fact only what make sense to them and only when they can choose their activity. It is learning by doing and not learning by listening. Dewey, the initiator of active approaches to teaching, calls this 'experiential education', which we call today 'project pedagogy'. Project pedagogy as a new curriculum and methodology guidelines suggest that having teachers involved in research projects can change how mathematics is experienced in the classroom, especially in connection to statistics. Inquiry is a well-accepted (but not always implemented) process in other school subjects, like science and social studies, but it is rarely used in a mathematics classroom (where statistics is usually taught). Moreover, when time available for teaching is scarce a formative cycle when teachers are first given a statistical project to work with and then carry out a didactical analysis of the project can help to simultaneously increase the

teachers' statistical and pedagogical knowledge. A related activity is asking the teachers to plan a lesson to teach students some aspects of statistics and analyzing later the lesson produced. At the same time provides the teacher educator with information regarding the future teachers' previous knowledge and learning (Godino et al., 2008).

Meaningful learning occurs through rethinking old ideas and coming to new conclusions where new ideas conflict with old ideas. We all learn by using our experiences, prior knowledge and perceptions within our physical and interpersonal environments to construct knowledge and meaning. An effective constructivist classroom, then, consists of learner-centred activities in which knowledge is not a thing that can be simply transmitted by the teacher to student but is constructed as the student enquires, explores, questions, debates, applies and reflects upon what they know and can do. The student in the learner-centred classroom is an active learner, while the teacher facilitates their learning by providing opportunities for learning characterized by active engagement, problem solving, collaboration with others and inquiry. In the constructivist classroom the teacher as guide directs and facilitates learning. Thus, the teacher's focus is on asking questions that will guide students to develop their own understanding, enable them to generate new ideas and understandings, and integrate these into their growing body of knowledge and skill.

The learner is necessarily the first actor in the construction of his skills. They equally advocate that learners are to participate in the evaluation of their learning so that the learner monitors the development of expected competences. Learner-centred teaching strategies advocated for the implementation of competence-based curriculum in secondary schools include: role plays, problem solving, projects, case study, simulation, discussion, and outdoor activities. The advocated pedagogy for the implementation of the CBA is considered time consuming. Thus, teachers complain that there is too much to teach within a short time (Tilya&Mafumiko, 2010). On assessment, CBA emphasizes on use of formative assessment, focused on the prescribed competences. CBC expects teachers to assess students frequently using authentic assessment methods (Weddel, 2006; Paulo and Tilya, 2015; Makunja, 2015). It shows the direct relationship between Learner- knowledge. This relationship is favored and the teacher is the organizer of external learning processes. He is a mediator and there is a stronger bond between the learner and knowledge.

The Training Process

All training institutions of the academy are actively involved in the project. The teachers of training schools, educational systems and networks have developed the new working program of courses in which the disciplines are considered as the mean of mastering the certain competencies within these disciplines. Competence-based approach fixes and sets up the subordination of knowledge and skill sets. An important role of competencies, which are formed during the study of the

subject can be transferred to the study of other objects to create the integrated information to other knowledge in other disciplines this show the interdisciplinary connections to the teachers. In the case of the training process the teacher is an organizer encouraging exchanges between learners. During that training it is essential to improve professional practice because it is through the exchange of ideas and materials among teachers who have common problems and needs that new ideas emerge for the introduction of new activities, new practices or new competencies (Arnold, 2008). -In the next section, based on the specific case of a Center for Adult Continuing Education, we describe how by changing the organization of the educational environment, the Center enabled its teachers to modify their approach to teaching and to move from a teaching process to a learning process, consequently adopting a new pedagogical paradigm. Uncertainty is also ubiquitous in teaching because of the unique and dynamic interactions between teacher, students, and subject matter in any given classroom. Therefore, teachers must understand and navigate the uncertainty inherent to both statistics and the classroom simultaneously in order to function effectively. Online case discussion among a group of prospective secondary mathematics teachers in Groth's research where they offered and debated conjectures about general pedagogy, statistical content, and content-specific pedagogy showed that cases can help catalyze online conversations in which prospective teachers challenge one another's claims and interpretations.

The teachers called upon their teaching knowledge and teaching methods to create a new training environment in order to adjust to the new ground rules defined by their institution. They are constantly in interaction, the teacher presents the situation for the learner to resolve and when the learner cannot, he turns to the teacher for remediation. His ideas are contrary to traditional methods of teaching where learners were considered as empty vessels that should sit and wait for information from the teacher only. In addition, he presents the teaching process relation in which the teacher knowledge relation is privilege. The teacher is supposed to structure lessons for the learner, he looks for content. In the teacher knowledge relation, the spend time, organizes his lessons in order to better guide the learner. As teachers, we must be mindful of our student's current schemas that enable them to organize and accommodate their growing conceptual understanding, knowledge and skills. Classrooms that provide opportunities for students to build their knowledge and skills through inquiry, imaginative creation, invention and testing, interaction and personal reflection typically invite cooperative approaches.

Denis(2017), carried out research on students 'school engagement and academic achievement in the secondary schools. His results show that there is a significant relationship between students 'engagement and academic achievement. His findings focus on one dimension of our preoccupation in that if learners sacrifice their leisure time for academic purposes, they will overcome many barriers

especially with the introduction of the CBA which is learner-centered.

After this literature review, our statements of the problem, research questions, hypotheses and the research objectives are as follows. The first part of this chapter two presents the definition of some concept used in this study, followed by the theoretical framework and lastly the methodology used in the study. The chapter begins with the conceptual framework as follows.

IV. CONCEPTUAL FRAMEWORK

The conceptual framework here consists of defining and explaining the key concept in this research study work. The key concepts in this work are; competency-based approach, learners' misconception, difficulty in teaching and learning. These concepts are explained as follows:

Competency based approach

In fact, there was a shift in the implementation of a competence-based approach in historical perspective. Several decades ago it could be really a kind of to-do-list as well as the main idea of education was concentrated on the providing students with narrow disciplinary knowledge. The student was just supposed to be aware of the exact field of knowledge, i.e. the key concept of education was to learn by heart the necessary information while now it is necessary to know how to get the information, how to process it, what is the best way to implement it. Today, there are different interpretations of the concept of "competence approach", but they are all aimed at providing the learner with the skills to independently solve a set of tasks, including tasks of a personal and professional nature. The present study examines the meaning and role of different types of Competency-Based Education means worldwide. Modern tendencies in education demonstrates a shift in philosophy of education, which consists in the fact that the key goal is to teach how to get information, process and apply it. The key idea of Competency-Based Education can be formulated as to provide student both with Proceedings of the 8th International Multi-Conference on Complexity, Informatics and Cybernetics (IMCIC 2017) knowledge and skills to implement it. The definitions of Competency-based approach vary in different parts of the world. The conversational panel "Competency-Based Education: Is it a to-do list or a way to achieve meaningful outcomes?"

According to Rychen and Tiana (2004), —A Competence is an ability to meet demands successful or to carry out an activity or task. Approach referred to a set of ideas or actions intended to deal with a problem or situation. Richards and Rodgers (2002) defined competency-based approach as "an educational movement that focuses on the outcomes or outputs of learning in the student after school. Also, it is a form of educational strategy that exposes a learner to real life experiences which help her/him to solve a problem in hand (Rychen et al, 2004). The U. S. office of education (1978) defines competency-based education as a functional approach

that focuses on life skills and evaluates those skills according to learners' performances (Savage, 1993; cited by Kathleen, 2006). Competence is the —capacity to answer complex demands and to work in an appropriate way involving the ability to meet complex demands, by drawing on and mobilizing psychosocial resources (including skill and attitude skill and attitudes) in a particular context (OECD, 2002, pp. 4). These new requirements are not hard connected with some discipline, they are interdisciplinary and universal. Its formation requires not only new subject matter, but other educational technologies. The competence-based approach allows to:

- coordinate the purpose of study, which the teacher puts with students' goals;
- unload students not by reducing the content, and by improving the part of individual self-education;
- Prepare students for conscious and responsible learning, the necessity of constant self-education; — and most importantly, in our view, provide the labor market by competitive specialists.

This new approach is based on developing learners' competencies in order to help them face some problems in their daily life. It aims at enabling learners to put what they have learned to other life settings. CBA comes to relates school life and real life setting, to help learners become competent in the society. The first apparent characteristic of the CBA is the focus on learning and students' activities (learner-centered) rather than on the teacher's role. Today there are already the first results of the implementation of competence-based approach in the educational process. One of the positive issues is the changes that have occurred in the redistribution of motivational aspects of cognitive and training activity of cadets. During two academic years we observed the changes in the motivational component of the educational process, namely, we were interesting how the content of the course "Computer Science for skippers", the strengthening of applied direction of the discipline and the interdisciplinary connections of the courses effect on the interest of students, increase their motivation level. The following types of motives were selected:

- a. Motives for avoiding troubles (traditionally they had the higher percentage of dominance);
- b. Motives of the content of educational activity;
- c. Motives of attitude to the learning process

Competency based education adapts to the evolving needs of students, teachers and needs of society; competency which implies the ability to use a skill. It requires a close focus on potential possibilities of future activities of graduates. Given this, we have to mention that the competency based approach implies that the teacher and students are competent which in turn requires determination of the specific competences that has to be typical for a teacher according to the new educational approach. As a result, we note that the essence of the new paradigm of education can be characterized by the following factors: 1. The displacement of the main emphasis

from mastering the large amounts of information to master the methods of continuous acquisition of new knowledge and the ability to learn independently; 2. The mastering of skills to work with any information, with mixed, contradictory data, forming the skills of independent, critical way of thinking; 3. The gradual change of the traditional principle "form of knowledge and skills" to the principle "to form professional competence. The CBA is also a socio constructivist approach based on training students to construct their own knowledge to be able to use it in their daily life. According to Auerbach (1986) cited by Richards and Rodgers (2002 p.146), the essential features included in implementing the CBA syllabus is a focus on successful functioning in society.

Learners' Misconception

This refers to wrong believe. It is a view or opinion that is incorrect because it is based on faulty thinking or understanding. Misconception is an idea that is not correct. Recent research on students' conceptual misunderstandings of natural phenomena indicates that new concepts cannot be learned if alternative models or belief that explains a phenomenon already exist in the learners' mind. Teachers can be astonished to learn that despite their best efforts, students do not grasp fundamental ideas covered in class. Even some of the best students give the right answers but are only using correctly memorized words. When questioned more closely, these students reveal their failure to understand fully the underlying concepts.

The environment in which students learn the nature and character their teachers can cause students to develop misconception in learning a phenomenon or a subject. In addition, learners can develop misconception from interacting with persons who may either encourage or discourage them from concentrating in studying particular subjects (because the concept is too technical or complex) such as Schoolmate, friends, parents, and teachers. Senior Students sometime discourage junior students from reading certain concepts and subjects because they believe that since it was difficult for them, any other person cannot also understand, or it will also be difficult for the new students.

Difficulty in Teaching and Learning

Teaching is the process of impacting knowledge, skills, attitude and values. It is a process of instilling, transmitting or constructing knowledge (Lagerge 2003). According to the Oxford Advanced Learners' Dictionary, teaching refers to the process of showing somebody how to do something so that the person can be able to do it himself. Teaching involves several kinds of skills, classroom lesson planning, classroom management, selecting subject content, use of specific methods to transmit the content, evaluate and discuss with students. One of the problems is how to put knowledge at the disposition of the students to ease their learning work, the quality of what taught, the way it is taught determinant for the quality of what is received. One of the purposes of teaching is to train students to produce answers according to the

problems encountered; here teaching effort is centered on the activities that could bring changes to the learners' behavior.

Learning is the acquisition of knowledge or skills. Learning is the process of gaining knowledge or skill by study, experience or being taught. Learner refers to a trainee, apprentice, pupil, student, newcomer, starter, initiate, new recruit (online dictionary Webster). Learning involves acquiring new competence and changing in the way of reaction. According to LD. Crow (1963), learning supposes a change, it has links with the acquisition of abilities, knowledge and attitudes. It brings personal and social adjustments to individual. Therefore, the concept of change is very important to learning, it implies learning took place. According to Oxford Dictionary 5th edition, difficulty refers to the effort that something involves something not easy, requiring skills to solve or understand or the state of being difficult. Some of the difficulties faced in teaching and learning include, overcrowded classes (Rufus Lenger, 2009) as cited in (Samia 2012) classes are crowded in such a way that it is difficult to discipline the students. He added that most of the students are stubborn, students do not have textbooks, some teachers explain the lessons poorly and tell students to read their textbooks at home, while others rarely come to class. Some students are slow learners, (Fru R. Campost 2009) and are not in the same level with other learners in class due to their slowness and coupled with the fact that they are not often given sufficient attention in the teaching learning process.

Theoretical Framework of the Study

This research work is enhanced by the cognitive and socio constructivist approaches.

The cognitive theory of learning by Jean Piaget

Cognitive theory was developed by a Switzerland biologist called Piaget. He studied how children adapt to their environment using observation. Adaptation occurs in three stages via assimilation, accommodation and accommodation. This theory has made us to understand that learners can construct their knowledge by interacting with their environment thus we need to make learning environment conducive for the learning process. Example; geography class should be organizing with geographic didactic materials such as globe, maps and rock type past on the walls. Also, this theory made us to understand that we need to prepare our lesson note in function of age and class differences since at certain age students are not able to do certain things. Cognitive theory focuses on the thought processes behind the behaviour. This process is psychological in nature and attempts to explain human behavior by understanding thought processes. Piagetian constructivists believe that knowledge is constructed through an individual process (Wadsworth, 1996). Social constructivists, such as Vygotsky (1978), believe that knowledge is not located in individuals but rather in communities. How the learner constructs this knowledge is one of the main differences between constructivist and socio-

constructivist theories. Both constructivist methodologies encourage hands-on approaches to teaching; however, the socio-constructivist view focuses on this development being constructed in cooperative settings of discourse (Brody & Davidson, 1998). Current movements related to constructivism are very socio-constructivist in nature using learning in cooperative groups and meaningful tasks that promote discourse (Brody & Davidson, 1998). The misconception students have in some technical topics in geomorphology is as a result of what they have conceived in themselves and it is manifesting via not concentrating in reading particular topics in physical geography. Poor marks registered in these topics, poor class attendance, and not interested furthering education in this part of geography. There is therefore the need to establish tight relationships between acquiring knowledge and developing thinking processes.

Teachers need to take into consideration students varying ages and class levels when teaching especially some technical phenomena such as plate tectonics. Also, the minds of the students need to be influenced at a younger age physically, practical, spiritually and verbally in an optimistic way despite the challenges they normally encounter in the learning process.

Socio-constructivist theory of learning by Vygotsky

Socio-constructivist theory of learning emphasized on the social aspects of the learner, Vygotsky is the promoter of this theory. According to this theory, learning goes with interactions, co-construction, co-elaboration, team spirit in learning. According to Vygotsky, learning is considered as the products of socio-cognitive activities link to the didactic material exchange between teacher-students and students-students. The socio-construction of knowledge is reinforced by the fact that knowledge is self-constructed by the learners. The socio-constructivist theory is totally against the traditional methods of teaching. This theory gives an opportunity for the teacher to work in partnership with the learner, so they develop their proper knowledge. Therefore, the teacher is no longer the person who knows everything but rather a guide or a facilitator in the construction process by the learner. The teacher is the facilitator in the knowledge construction process by the students; he is a collaborator as he poses questions to facilitate understanding. According to Vygotsky, social interaction plays an important role in the process of cognitive developments. This theory considers that each function in the cultural development of the child appears twice; starting with the social aspects then the individual aspects. The development theory considers two principles; the proximal zone of development and the more knowledgeable order. The proximal zone of development to the situation where a learner can carry out a task with the help of a teacher or collaborator and what the learner can do on its own. It is believing that learning takes place in this zone. That is why Vygotsky calls it the zone of proximal development. Here, the task assignee to the learner should not be complex

or difficult, that is why the term proximal is used to avoid discouragement or failure. They believed curriculum should be based on students' interests and involve active experiences (Brewer, 2007).

Supporter of Vygotsky like Dewey also believed that curriculum should be integrated, rather than divided into subject-matter segments (Brewer, 2007). Dewey (Brewer, 2007) believed teachers were responsible for achieving the goals of the school, but the specific topics to be studied to meet those goals cannot be determined in advance because the topics should be of the interest to the children (Brewer, 2007). Dewey believed that learning was active, and schooling was unnecessarily long and restrictive (Neill, 2005). He believed that students should be actively involved in real-life tasks and challenges (Neill, 2005). Dewey's educational philosophy helped forward the progressive education movement (Neil, 2005). This philosophy of education began the development of experiential education programs and experiments (Neill, 2005). These views of pragmatism are very similar to today's view of constructivism. Though Dewey's ideas of learning are very similar to constructivist principles today, constructivism today is said to center on ideas from Lev Vygotsky (1978) and Jean Piaget (Wadsworth, 1996; Broody & Davidson, 1998). So the expectation within a constructivist learning environment is that students play an active role in, and take responsibility for, their learning. A key issue, of course, is how we as teachers address a pre-existing curriculum. Teachers using both intuitivist and constructivist approaches inevitably use assessments, formal and informal, to identify where their students are in their learning, and then design learning activities that are appropriate to those learners at the identified stages. For the constructivist teacher, a pre-existing curriculum is a given, but the teaching decisions they take as they provide opportunities for learning characterized by active engagement, problem solving, collaboration with others and inquiry, and as they scaffold their students' learning are inevitably shaped into classroom events.

Teachers who promote socio-constructivist views depended on group interaction and learning activities and assignments that foster the development of knowledge. Both constructivist and socio-constructivist approaches encourage trial and error, experimentation, and interaction with learners, guided by instructors, which allow students to develop their own understanding from real life context (Brody & Davidson, 1998). The introduction of constructivist learning theory into the American education system has not been completely embraced since its inception, thus classroom-teaching philosophies are still very diverse (Klein, 2003). This paradigm has caused researchers to coin the term "reform mathematics" as efforts to shift from the behaviorist approaches to instruction to constructivist approaches. Because of the overlap between teachers' experiences and teacher education, the ability to monitor "reform mathematics" classrooms has been a challenge for researchers. Teaching students or future leaders should not be

taken like business safari in which what matters is the number of hours taught a day in the so many different schools, but what learners were able to retain.

Mindful of the challenges teachers face in implementing the CBA, teachers are encouraged to put extra efforts to implement the CBA especially the strategies used in teaching under CBA. Since CBA is action oriented, it requires teachers 'in action, teachers who will draw on their professional skills in subject matter, methodology, in decision-making and in social skill to enable the learners to be achievers. Although teachers are putting in more efforts as guides, advisers and facilitators, they are also encouraged to accept their profession and perform their duties judiciously. Teachers should try to reduce the number of hours taken in other school for extra classes to concentrate in their own school.

The more knowledge order refers to the person having higher level of reasoning than the learner. The more knowledgeable order is the teacher, the guide, the facilitator or an age person it can also be a younger person or a computer. Therefore, in using CBA, these theories must be applied in pedagogy to maximize learners' outcome. This theory gives an opportunity for the teacher to work in partnership with the learner, so that they can develop their proper knowledge. The teacher is no longer a person who knows everything but rather a guide of a facilitator in the construction process by the learners. The teacher equally constitutes his learning environment in to groups to ease management or forming a community of learners. The theory is totally against the traditional methods of teaching and learning, that is why Vygotsky shows that teaching and learning based on this theory is very efficient. The theory proposes scaffolding, reciprocal and guided teaching. Scaffolding is a tentative structure put in place by the teacher to enable a student carry out a task which he could not do on his own. Vygotsky considers reciprocal teaching which is the one in which students consider the teacher as a collaborator as he poses questions or facilitate understanding. Learner need to understand that CBA is based on socio-constructivism, the learner should go through a process of personal appropriation, questioning his own convictions. This leads the learner to revise his prior knowledge and its scope to compare his own representations with those of his classmates, to search for information and validate it through consulting various sources of documentation and people in possession of information. In doing so, the learner will appeal to cognitive, affective and motivational strategies in order to set a balance between his previous knowledge and his newly acquired knowledge. The reflection of the learner will operate on his own learning processes, assure the quality of his acquisition and facilitate his retention. It is also essential to note that negotiation is an important aspect of a constructivist classroom. It unites teachers and students in a common purpose.

Models of the Curriculum Development in Third World Countries

The curriculum links the macro (officially selected educational goals and content) with the micro (the act of teaching and assessment in the classroom/school) and is best seen as 'a series of translations, transpositions and transformations' (Alexander, 2009, p.16; original emphasis). The official curriculum is transacted and, in the process, gets transformed, as 'teachers and students interpret, modify and add to the meaning' embodied in the official specification (ibid.). Thus, curriculum, pedagogy and assessment are interrelated and mutually influence one another in the day-to-day classroom interaction (Bernstein, 1975, Alexander, 2009) for any country to reach competence they must pass through the following curriculum driven process as seen in fig 1 below

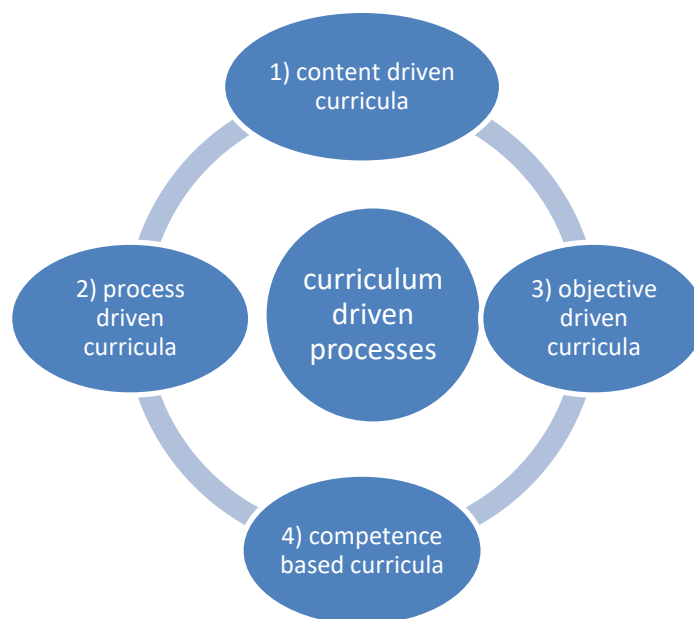


Fig 1: adapted model for curriculum process from Bernstein 1975

Content-driven curricula: Content-driven curricula exemplify Bernstein's 'collective' code, in which subjects such as mathematics or science are used to describe the curriculum, with increasing specialization for older students. The key concept is discipline, which 'means accepting a given selection, organization, pacing and timing of knowledge' in the pedagogical relationship between the teacher and the taught in order to cover the curriculum (Bernstein, 1975). Knowledge is transmitted in a situation where the teacher has maximal control.

Process-driven curricula: Process-driven curricula exemplify Bernstein's 'integrated' code, in which the content areas stand in an open relation to each other. Students have more discretion over what is learnt compared to individual teachers, who have to collaborate with colleagues from other disciplines. Process-driven curricula include a range of models - cross-curricular, integrated, interdisciplinary, thematic. Multiple forms of assessment are used, with a focus on formative, personal, coursework-based and open-ended assessment (Ross, 2000).

Objectives-driven curricula

Objectives-driven curricula are structured around sets of expected learning outcomes, which are written by specifying the kind of behavior as well as the Experience: Enacted/received curriculum via textbooks, learning materials, teaching strategies and practices, student organization, tasks, activities Hidden curriculum school/gender roles Student learning: (cognitive, affective and psychomotor; identity; citizenship; agency) School factors (resources, class size, learning materials, leadership) Official or intended curriculum (aims, content; models–content-, process- or objectives-driven) Teacher factors (professional development, motivation, terms of contract, accountability, beliefs about knowledge and learning and students) Assessment (high stakes, formative, summative, skills emphasized Control (elites determine its selection to serve their interests) and contestation (by marginalized groups) Learning culture and values Language in education policy Student agency and other factors (gender, SES, health, locality, home and first language, ethnicity, religion etc.; motivation, age, needs) e and first language, ethnicity, religion etc.; motivation, age, needs) context in which that behavior is expected to operate, e.g. comprehending, applying, analyzing, starting with lower-order objectives and moving to increasing levels of complexity (Tyler, 1949). Driven by utilitarian ideals, content is usually selected based on its relevance to the workplace.

4. *Competence- or outcomes-based curricula:* Competence- or outcomes-based curricula are structured around sets of learning outcomes that all learners are expected to be able to achieve successfully at the end of their learning experiences (Botha, 2002). Curriculum, instruction, and assessment are organized in a way that makes sure that this learning ultimately happens. It is considered to produce life-long learners who can better adapt to the world of work, and is considered inherently more democratic

V. RESEARCH METHODOLOGY

Research Design

The present study will adopt the descriptive and analytical methods. These two methods will enhance the understanding of the situation observed in the field. The analytical approach will help the researcher to analyze and interpret the information collected from the field. Hypotheca deductive will be use and this will help the researcher in the verification of the hypotheses.

Target population

The target population are final year students of government teacher training college are chosen because of the CBA is their targeted innovative program as future teachers as well as learners.

*Sample Techniques**Data Collection*

Data was collected using qualitative and quantitative research methods. Primary and secondary data was used to achieve the stated research objectives. Data was analyzed in the light of research objectives using the software SPSS and excel. The research instrument which was used in the field is: field observations, questionnaires and interview guide. These instruments were selected to have qualitative and quantitative data.

The Primary data collection

The primary data for this work was generated principally through field work using different techniques. Methods of data collection on the field were through interviews, questionnaire administration and field observation, (direct, indirect and participative observation). At Bilingual Teachers Training College (BTTC) Melen researcher was directed to the school coordinator who gave her the visa to visit the various school structure and classes for her research purposes, (see annex 1.) The instruments used on the field to collect data were interview guides and sampling with the use of questionnaire. Questionnaires were formulated based on the research objectives and distributed to Statistics teachers and level one and level two students of BTTC Melen

Field observation:

The researcher observed the school library, the number of Statistics text books found there. I observed the classroom sizes, the number of students in a class. Furthermore, I also observed and counted the number of didactic materials available for the teaching learning process in such as the number of globes, maps, videos and sample of rock types. This will enabled the researcher to know the materials and structure available for the proper implementations of the CBA and to proper assess how CBA can be use in overcoming learners 'misconceptions.

Data Analyses

The treatment of the data collected from the field was analyzed using Microsoft excel and Statistical Package for Social Sciences (SPSS). Micro soft excel was used to come out with graphs and pie chart while SPSS facilitate data analyzes and treatment. Data collected from the field was assessed to get information which guided the researcher to either accept or rejects the stated hypotheses. Also, some of our findings were presented in the form of photos to view the activities carried out in the field.

Data Presentation

The data collected from the field via questionnaires, interviews and observations after analyzing, was presented in the form of literature, pie chart, graphs and photos to show what was observed in the field.

VI. RECOMMENDATION

The proposed recommendation is address to the stakeholders who oversee the promotion of education in Cameroon, school authorities, teachers, parents and learners.

To the stakeholders

To the school administration, schools should be equipped with the entire essential textbook for every subject. Learners who do not have those textbooks will visit the library and carry out their research. A well equip library will encourage learners to do research. School administration should reduce the number of students in Form five. They should build many Forms five (ABC to decongest). The school administration should not allow more than 100 students in one class. This is because an overcrowded classroom is a hindrance to class management.

The ministry of secondary education in collaboration with the pedagogic inspectors should make it obligatory for all teachers to attend the yearly pedagogic seminar organized between the month of September and October. This is because it is here that most challenges teachers face in implementing competency-based approach will be discuss and solution propose.

To the teachers

Although teachers are putting in more efforts as guides, advisers and facilitators, they are also encouraged to accept their profession and perform their duties judiciously. Teachers should try to reduce the number of hours taken in other school for extra classes in order to concentrate in their own school. Teaching students or future leaders should not be taken like business safari in which what matters is the number of hours taught a day in the so many different schools, but what learners were able to retain.

Mindful of the challenges teachers face in implementing the CBA, teachers are encouraged to put extra efforts to implement the CBA especially the strategies used in teaching under CBA. Since CBA is action oriented, it requires teachers 'in action, teachers who will draw on their professional skills in subject matter, methodology, in decision-making and in social skill to enable the learners to be achievers.

Teacher's Role in the Competency- Based Approach

Since CBA is learner-centered, it does not require teachers' servility. The teacher's role in any approach is closely related to the assumption about language theory and language learning theory. The teacher's role under the competency - based approach has similar the teacher's role under the competency - based approach has similar to the demands of the new method. The teacher is no more just a transmitter of knowledge whose unique responsibility is to fill in empty vessels, but rather is assigned the role of facilitator who engages learners in tasks and helps them to develop learning strategies for a successful learning. She/he is a counselor in that she/he exemplifies "an effective communicator seeking

to maximize the meshing of speaker intention and hearer interpretation, through the use of paraphrase, confirmation and feedback" (Richards and Rodgers 78) and is a resource person consulted about information or counsel. Also, the teacher is required to consider the individuality of learners that do not all go at the same rate, by resorting, if necessary, to individual teaching.

The teacher is also required to be an examiner and a learner especially in how projects are realized and what requirements need to be met for the achievement of those projects. Besides, the teacher has to start pupils of middle school to collaboration through pair and group work, much valuable in a socio-constructive perception of learning and teaching. In short, the teacher needs to help learners feel responsible for their learning. For example, they were roles to the teachers there are roles to the students themselves.

To the learners

Learner need to understand that CBA is based on socio-constructivism, the learner should go through a process of personal appropriation, questioning his own convictions. This leads the learner to revise his prior knowledge and its scope to compare his own representations with those of his classmates, to search for information and validate it through consulting various sources of documentation and people in possession of information. In doing so, the learner will appeal to cognitive, affective and motivational strategies in order to set a balance between his previous knowledge and his newly acquired knowledge. The reflection of the learner will operate on his own learning processes, assure the quality of his acquisition and facilitate his retention. It is also essential to note that negotiation is an important aspect of a constructivist classroom. It unites teachers and students in a common purpose.

Learners should do their best to study using all the methods and strategies in order to understand, develop skills and be able to be resolve real world situation. Education in Cameroon is no longer like formally in which the teacher was accountable for learners' education but learners are supposed to reinforce their capacity. Learners are supposed to understand that, CBA requires a close focus on potential possibilities of future activities of graduates. This new approach is based on developing learners' competencies in order to help them face some problems in their daily life. It aims at enabling learners to put what they have learned to other life settings. CBA comes to relates school life and real-life setting, to help learners become competent in the society. The first apparent characteristic of the CBA is the focus on learning and students' activities (rather than on the teacher's role. The CBA is also a socio constructivist approach based on training students to construct their own knowledge to be able to use it in their daily life. According to Auerbach (1986) cited by Richards and Rodgers (2002 p.146), the essential features included in implementing the CBA syllabus is a focus on successful functioning in society. Competency based education adapts to the evolving needs of students,

competency which implies the ability to use a skill. Therefore, learners need to be updated and be aware of their responsibility and do everything possible to be useful in the society.

Student's Role in the Competency-Based Approach

The competency - based approach is learner-centered, the learners are no more passive receivers of knowledge, they play an active rather than a reactive role in the learning process and are required to construct and mobilize their resources to face with efficacy a problem-situation. Hence, learners must develop strategies that enable them to overcome such obstacles, acquire problem- solving skills, and increase their intellectual potential. Learners act upon what they are learning, and thus assimilate better what they are learning. Additionally, they are required to collaborate and negotiate information. The competency-based approach initiates learners into self- assessment, to render learners more responsible for their learning, and to help them evaluate their acquisitions.

The Competency-Based Approach Lesson Plan

The lesson plan is a tool to guide the teacher in the classroom; he/she puts everything is related to the lesson such as aim, new lexis, warn- up and the main tasks. However, The Official Program Guide (2019) suggests a lesson plan for the teachers who follow this approach and CBA lesson plan calls for:

Presentation of the Problem-Solving Situation

This is the discovery phrase and it contains new notions to be discovered by learners. The teacher presents it and gives instructions to learners.

Systematization

After examining and bringing out relationship between previously learned elements and elements found in the new problem-solving situation, learners come out with roles (hypothetical). This is done with the help of the teacher.

Application

Here the teacher gives tasks where learners apply the new knowledge.

Partial Integration Activities

The teacher presents a new complex situation that will necessitate the exercise of the skill to solve a problem which is similar to the competence, skill the learners used at the beginning of the lesson and this has to be a concrete real-life situation. It should be noted that partial integration activities are not done systematically at the end of every lesson.

Putting the Exams

What characterizes exams is the situation of integration where learners are set free to write within a proposed content.

Situation of Integration

This phase is meant to the reinvestment of the resources in terms of the “knows” and the “know how to do”. The activities suggested should be built up towards the final output and help the pupils to ready to produce a piece of writing in accordance with the situation of communication. The circumstance is happening at a time and in a particular place.

According to Boukhlof defines that the situation integration reflects a skill to achieve in the student. It can be considered as an opportunity to exercise jurisdiction in the student, or as an opportunity to assess whether it has jurisdiction, and states some characteristics which specialized the situation of integration such are:

- ❖ It mobilizes an acquired together. These achievements are integrated and without added.
- ❖ It is task oriented, it is significant. It therefore has a social dimension, either for the rest of the student's course, for daily or professional life. It is not a learning "academic"
- ❖ It refers to a class of problems specific to discipline or set of disciplines, which has few parameters specified
- ❖ - She is new to the student.

The integration situation is made up of three components: a support, (of) tasks, one (of) records. Copies of the situation set of hardware available to the student and defined by

- The context describes the environment in which the situation is taking place. Information materials based on this information the learner will act.
- The function that specifies what purpose the production must be performed.
- The task: it is the image of what is expected of the student when resolving a situation.
- The set: it's all working instructions given to the learner explicit

To the parent

Parent should remember that encouragement and support for learning activities at home combined with parental involvement in schooling is critical to children 's education. A growing body of research shows that building effective partnerships between parents, families and schools to support children 's learning leads to improved learning outcomes. Parents are the first and continuing educators of their children. Research has shown that parental engagement (of various kinds) has a positive impact on many indicators of student achievement, including:

- ❖ Higher grades and test scores
- ❖ Enrolment in higher level programs and advanced classes
- ❖ Lower drop-out rates
- ❖ Higher graduation rates

- ❖ A greater likelihood of commencing tertiary education.

Beyond educational achievement, parental engagement is associated with various indicators of student development. These include:

- Better social skills
- Improved behaviour
- Better adaptation to school
- A greater sense of personal competence and efficacy for learning
- Greater engagement in school work
- A stronger belief in the importance of education.

Parent should do their own part well for the success of their children they should provide the essential textbooks for their children; they should in collaboration with their children come up with a reading table for them.

They should follow up their children educational progress at home. Parents are encouraged to follow changes in pedagogy as the school demands. They Follow the educational system yearly and assist in the parent teachers meeting (PTA) organized in a school, for the welfare of the students. This is because parent need to be aware of the changes in the educational system and help their children to adapt to any educational innovations. Parents should motivate their children to study at home.

Proposed Pedagogical Considerations to Teach Statistics to Achieved CBA

The approach of teaching this curriculum should model the correct application of statistics

- Emphasize authentic real-world data and substantive applications related to the statistical analysis cycle
- Develop flexible problem-solving skills by making and attracting students' interest on the course encourage them and motivate the students to arouse their effort and determination toward statistics.
- Present problems with a substantive context that is both meaningful to students and true to the motivating research question, problem presentation should not be abstract but real to students.
- Include experience with statistical computing and data-related skills by letting the students know how to apply related skills.
- Encourage synthesis of theory, methods, computation, and applications in many fields.
- Provide opportunities to work in teams for when students learn in groups they can learn from their peers and feel free to express their worries amongst themselves.
- Offer frequent opportunities to refine communication skills, tied directly to instruction in technical statistical skills

- Incorporate regular assessment to provide authentic feedback by given individual as well as group work

VII. CONCLUSION

In summary, competency-based education is characterized by specific measurable competency statements: content is based on learner goals(outcomes/competencies), learner continues in program until demonstrates mastery, uses a variety of instructional methods and techniques geared towards targeted competencies, provide learners with immediate feedback and continuous assessment of performance and pace instruction to learner needs. The competence-based approach supposes the development of students' abilities to solve problems in various spheres and activities based on the use of social experience. The idea of the educational process is to create conditions for the development of students' experience of an independent solution of cognitive, communicative, organizational, moral and other problems. It is the mastery of universal competencies that can meet the challenges of the time, regardless of the specific field of professional activity. The definitions of Competency-Based Education vary in different parts of the world, but they are all aimed at providing the learner with the skills to independently solve a set of tasks, including tasks of a personal and professional nature. Implementation of competency-based approach makes teachers follow the modern trends and be aware of the technologies available on the market, e-resources as well as skillfully apply their computer knowledge on practice. The abovementioned tendencies created necessity for the development of the advanced training program for teachers.

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