DIFFICULTIES FACED BY TECHNICAL SCHOOL TEACHERS IN SENEGAL

By

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DEDICATION

DEDICATED TO MY PARENTS

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O.S

TABLE OF CONTENTS

LISTS OF TABLES

ACRONYMS

AFD   Agence Francaise de Developement

BAC   High school certificate (Baccalaurèat)

BEFM   junior secondary school diploma (Brevet de Fin d`etudes moyennes)

BEP   The Patent of Professional Teaching (Brevet d'Enseignement Professionnel)

BT   The Technician Certificate (Brevet du Technicien)

BTS   The Higher Technician Certificate (Brevet de Technicien Supérieur)

CAP   The Certificate of Professional Aptitude (Certificat d'Aptitude Professionnelle)

CAEMTP   The Certificate of Aptitude for Middle Technical Training and Professional (Certificat d'Aptitude à l'Enseignement Moyen Technique et Professionnel)

CAESTP   The Certificate of Aptitude for Secondary Technical Training and Professional (Certificat d'Aptitude à l'Enseignement Secondaire Technique et Professionnel)

CEP   The Professional Teaching Center (Centre d'Enseignement Professionnel)

CEPE   Certificate of Elementary Education (Certificat D`Etude Elementaire Primaire)

CFA   The Center of Artisanal Formation (Centre de Formation Artisanale)

CFPT   Centre de Formation Professionnelle et Technique

CTP   the hut of the smallest (la Case des Tout-Petits)

CNQP   The National Center of Professional Qualification (Centre National de Qualification Professionnelle)

CNCPICD   The Delafosse National Center of Industrial and Commercial Professional Courses (Centre National des Cours Professionnels Industriels et Commerciaux Delafosse),

DATDR   The Diploma of Technician of Rural Development (Diplôme d'Agent Technique de Développement Rural)

DEA   Doctoral Qualifying Degree (Diplôme d'Etudes Approfondies)

DIT   Diploma of Engineer in Technology (Diplôme d'Ingénieur de Technologie)

DUT   University Degree in Technology (Diplôme Universitaire de Technologie)

EFA   Education for All

ENS   The National School of Secretariat (Ecole Nationale de Secrétariat)

ESP   The Polytechnic College (Ecole Supérieure Polytechnique)

FDEF   Technical Education and Vocational Training Development Fund

GoS	Government of Senegal
HSC	Higher secondary school certificate
ICCM	The Institute of Cut Sewing and Fashion (Institut de Coupe Couture et Mode)
ILO	International Labour Organization
MDG	Millennium Development Goal
METFP	Ministry of Technical Education and Vocational Training
M&E	Monitoring and Evaluation
MoE	Ministry of Education
NFE	Non-Formal Education
NGO	Non Governmental Organization
ONFP	National Vocational Training Office
PDEF	Ten-years Education and Training Programme (Programme Decenal pour l`Eenseignement et la Formation)
SSC	Secondary School Certificate
TVET	Technical and Vocational Education

ABSTRACT

A STUDY OF THE DIFFICULTIES FACED BY TECHNICAL SCHOOL TEACHES IN SENEGAL

This study was aimed to find the difficulties faced by technical school teachers in Senegal. The total number of population was all the teachers of technical education in the districts of Dakar and Ziguinchor. As the number of teachers is large and it was difficult to have the complete list, some teachers in the population were taken as sample by stratified sampling method. The results show that the teachers have some financial and administrative difficulties; they have some difficulties related to students' behaviours and some classroom instruction related difficulties. Beside these difficulties, teachers have some in the management of their classroom and some support from their school administrators.

CHAPTER I

INTRODUCTION

1.1 Background

Teaching-learning is a process that involves many factors. Teachers are one of the key factors of that system. Their task may be affected by many problems. During his professional activities a teacher has to face number of problems like, organising teaching, ensure students' attention, evaluation, maintaining discipline in the classroom, lack of resources, equipment materials, chemicals etc. The other problems may be the students coming late to classroom not doing their tasks on time, lack of support material, lack of furniture, equipments etc. In some cases teachers face also some administrative problems and some social problems that may have negative effects on their work. A resourceful teacher can solve difficult problems of teaching quite easily with a very small research programme. In this study we are going to find out the difficulties related to Teachers works. This study is conducted in the district of Ziguinchor in the southern region of Senegal. According to earlier findings in similar studies we have seen that the classroom difficulties may be related to: classroom management, learners' behaviours (attendance, discipline, performance based ...), availability and effective use of teaching materials, the curriculum, lack of proper motivation (incentives) etc... These difficulties may be different from one place to another and they may have some effects on the teaching-learning process. In this study we`ll see the difficulties faced by teachers in the district of Ziguinchor, and will they be different from the common problems. Ziguinchor is situated in the southern region of Senegal between the region of Kolda, and Kaolack on the north.

The region of Ziguinchor has three districts that are Ziguinchor, Bignona and Oussouye. It`s a multicultural region where almost all the ethnics group of Senegal are coexisting side by side. The people of this region mostly engage in farming, fishing trading and other small scale income earning activities for sustainable livelihood. According to the research findings of Sheets and Gay (1996), described the widespread discipline problems and disruptive behaviours common in high school classrooms. Overcrowded classrooms, made up of diverse groups of students of varying ethnicity and socioeconomic characteristics, showed extreme levels of disruptions. Canter (1997) estimated that secondary school teachers spent thirty to fifty percent of their in-class time handling behaviour problems. Most of these problems were relatively minor disruptions which originated in the classroom, and were often interpersonal in nature. The disruptive student might ",...challenge teacher authority,

interrupt, talk out of turn, respond loudly, argue, react emotionally, or socialize in class, (Sheets and Gay,1996, p.86)

1.2 Statement of the problem

This study aimed at identifying the classroom problems faced by the technical teachers at secondary school level in Senegal.

1.3 Objective

The objective of this research was to find out the difficulties faced by technical teachers at secondary school level in Senegal.

1.4 Significance of the study/rational

The study may help to identify the problems faced by technical teachers in their classroom situation in the district of Ziguinchor. This study may bring different problems that are not common in other places because Ziguinchor is a place where we have different cultures. It`s a very complex district in the cultural aspect.

The study will provide guidance to teachers working in that district and it will be very helpful for newly appointed teacher in the district of Ziguinchor. It can help them to take control of the situation and overcome the problems for better development of their students.

1.5 Delimitations of the study

The study was delimited to:

   i)   Six (06) out of 14 secondary schools of the district of Ziguinchor. The six schools are: Tete Diedjiou, Peyrissac, CEMT, Soucou papay, Malick Fall and El Hadji Omar Ndiaye.

   ii)   36 secondary school teachers of the district of Ziguinchor from the selected six schools.

1.6 Assumptions

   - The respondents cooperated in providing the data for the research.
   - The respondents had enough knowledge in the area of the research to be able to clearly articulate answers to the questions.
   - The respondents were fair in their answers to make the research work reliable and valid.

1.7 Definition of terms and concepts

   - Difficulties: in this study mean the constraints faced by the teachers.
   - Classroom situation: refers to place where the teaching-learning process is taking place.

- BST means Bloc Scientifique et Technique : It is school in a district built with equipped laboratories only for teaching science and technology by lecture and demonstration method.

- LTID stands for Lycee Technique Industriel Maurice Delafosse: It is a high school for technical education and vocational training in industrial domain.

- CEMT means College d`Enseignement Moyen Technique : It signifies technical secondary school.

CHAPTER II
THE REVIEW OF RELATED LITERATURE

2.1 The education system

The Senegalese`s education system comprises:

    (i)   The formal sub-sector of which the pre-school, primary education, middle and the general secondary, the technical and vocational education, the teacher training and the tertiary level;

    (ii)   The non-formal sector embracing literacy and the community basic school.

As a former French colony, Senegal's educational system was strongly influenced by that of France, and thus is very similar to the French system. The basic format is six years of primary school, four years of junior high school (or secondary school), and three years of high school as shown in the (figure2). Secular education is compulsory and free in Senegal up to age 16; although this policy is not enforced in areas where Islamic education is preferred. At the end of 6 years, pupils must write a common examination to determine whether they may study further. There are public and private providers within each of these levels of education. However, the number and diversity of the private providers has increased since 1990 particularly in higher education. Likewise, special education (integrative and other kinds) is becoming more and more important in the system. Even though its presence is stronger in elementary schools, trends in the development of this sector are towards better coverage of previously neglected school-age populations. The academic year begins in October and ends the following July.

2.1.1   Preschool Education

Preschool education is equivalent to kindergarten education, and accepts children under the age of seven. No particular qualifications are granted during education at this level. There are also the "Case des Tout-Petits" (CTP) or "the hut of smallest" that is a community-based structure for the development of children in the early years (0-6 years). It began in 2000 on a personal initiative of His Excellency Abdoulaye Wade, President of the Republic of Senegal at that time.

2.1.2 Elementary Education

Elementary education is equivalent to primary school, and the age of school entrance is seven. However, in certain cases, children from ages six through eight are permitted to enter school. There are six years of elementary education, the first four of which are compulsory.

Children automatically progress through the four years of compulsory education, but after that, failing grades are possible and they are allowed to fail up to twice. At the end of elementary education, there is a certification examination, (Certificate of Elementary Education: CEPE).

2.1.3 Secondary Education (phase one)

Secondary education is equivalent to junior high school, but is one year longer, at four years. The age of school entrance is 13, but in certain cases, students from ages 12 to 14 are permitted to enter school. In order to enter school, students must hold a CEPE certificate and take an entrance examination. Students are permitted to fail only one grade out of the four. At this stage, there are general courses and technical courses. Upon graduation, students are granted the Patent of Completion of lower Secondary Education (Brevet de Fin d'Etude Moyenne: BFEM), certification that they have completed the first phase of secondary education. This certificate is equivalent to secondary school certificate (SSC).

2.1.4 Secondary Education (phase two)

Phase two of secondary education is three years and is equivalent to high school. Students must hold a BFEM certificate as a prerequisite for entrance. Normally, students who are continuing on to phase two at the same school where they completed phase one are permitted to enter with only a school assessment. The age of school entrance is normally 17, but in certain cases, students from ages 16 to 20 are permitted to enter. Only one failure is allowed. At this stage of education, as in the previous stage, there are general courses and technical courses. Upon graduation, students may receive a Baccalaureat (BAC), equivalent to the higher school certificate (HSC), which qualifies them to enter university.

2.1.5 Higher education

Higher education in Senegal is equivalent to university and graduate school education. To enter university, students must hold a BAC and take an entrance examination.

The age of school entrance is normally 20, but in certain cases, students under the age of 19 with a BAC who pass the entrance examination are permitted to enter.

The period of study is three years, at the end of which students receive a bachelor's degree (License). One further year earns a master's degree (Maitrise) and one year after the Maitrise earns a Doctoral Qualifying Degree (Diplôme d'Etudes Approfondies: DEA). The student is awarded a doctoral degree (3e cycle) after three years of study following the DEA, or, in other words, after a total of eight years of study. For medical and pharmacy courses, the period of study is six years, after which the student receives a doctoral degree (Doctorat). Those in engineering and other technical fields receive separate qualifications. For example,

graduates of the two-year course at Higher National School of Technology receive University Degree in Technology (Diplôme Universitaire de Technologie: DUT) and graduates of the four-year course receive a Diploma of Engineer in Technology (Diplôme d'Ingénieur de Technologie: DIT). As shown, Senegal has certification examinations upon graduation in every stage of the education system, and students who pass the examinations are able to advance to the next stage. Also, in terms of finding employment, if a student does not possess a particular qualification certificate it is assumed he or she has not completed that level of education. The certificate is, therefore, an important element in the determination of selection and working conditions (particularly those related to salary). The various qualifications acquired through Senegal's education system are treated the same as the corresponding qualifications acquired not only in neighbouring former French colonies, but also in France. As a result, qualifications earned in the Senegal education system are applicable if a student has been accepted into an educational program of the next stage in France.

2.2 Overview of the general education system of Senegal
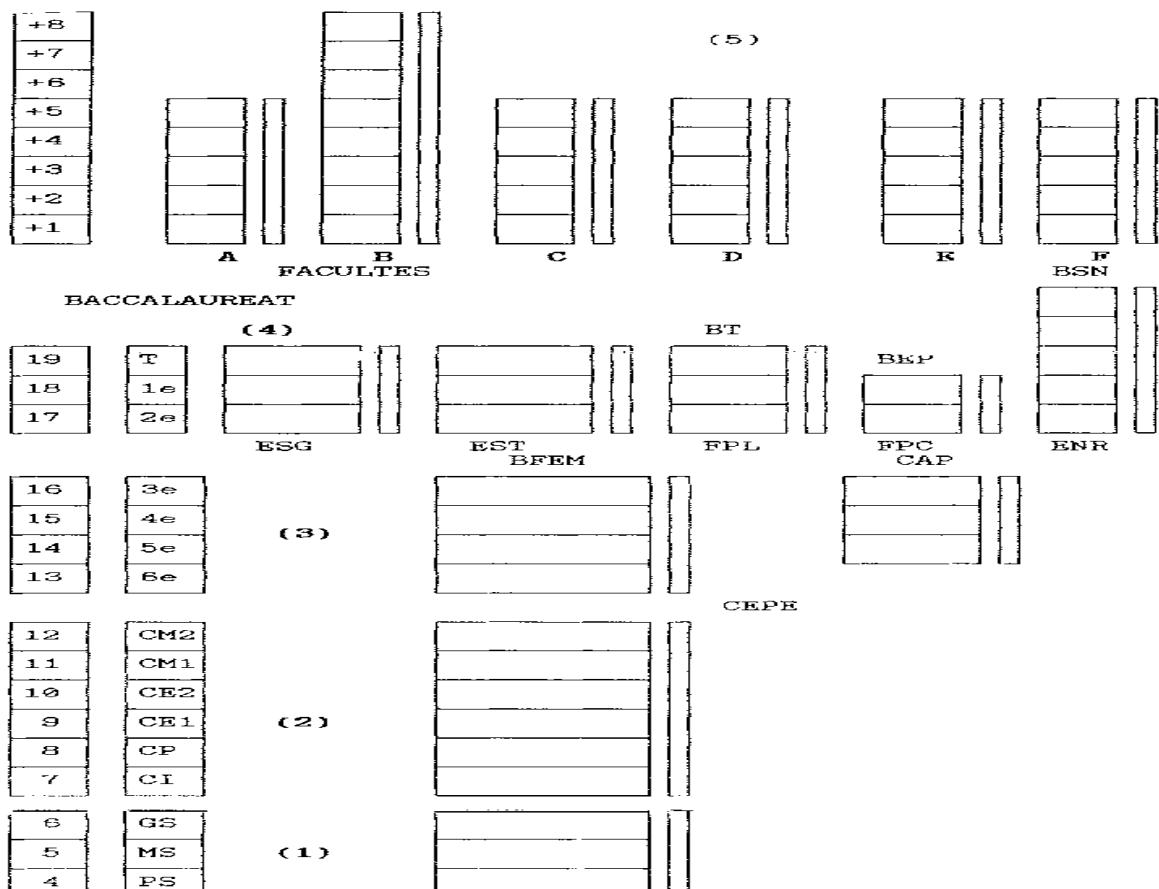
Figure 1 the General View of Senegalese Education System

2.3 The different steps and certifications in the education system of Senegal

University Or Polytechnic		Polytechnic (to your specialization)	
Certificate: Baccalaureat		Certificate: Baccalaureat (BAC- Technic)	
Lycee	Terminale Premiere Seconde	3 years	
Technical Education		**Vocational Education**	
Certificate: Brevet de Fin d'etudes Moyen (BFM)			
Cycle	Trosiem (3eme) Quatrieme (4eme) Cinquiem (5eme) Sixieme (6eme)	Vocational Education (CAP certificate) Duration: 2 years	Year 10(UK) Year 9(UK) Year 8(UK) Year 7(UK)
Certificate: Entrée en Sixieme			
Cour Moyen	CM2	11years	Year 6(UK)
Cour Moyen	CM1	10years	Year 5(UK)
Cour Elemene	CE2	9years	Year 4(UK)
Cour Elemene	CE1	8years	Year 3(UK)
Cour Preparatoir	CP	7years	Year 2(UK)
Cour Initiative	CI	At 6 years old	Year 1(UK)
No Certificate is needed			
Jardin d'enfant	Case des tout Petit Or Jardin	Children under 6years old 3-to-5years old	(Kindergarten or nursery school)

Figure 2: The Education System

2.4 The Technical and Vocational Education

Education in general, technical education and vocational training in particular have always been regarded by the Government of Senegal as priority objectives in the context of the implementation of policies on economic and social development.

Indeed, the allocation of approximately 27% of the budget of State for Education and Training shows, if need be, the willingness of authorities to promote an effective policy in the field of human resources. TVET systems in Senegal are delivered at different levels in different types of institutions, including technical and vocational schools (both public and private), polytechnics, enterprises, and apprenticeship training centres. Traditional

apprenticeship offers the largest opportunity for the acquisition of employable skills in the informal economy. Nothing lasting will be acquired for the modernization of the productive apparatus, without a real effort to adapt skills to economic and social requirements, without constant irrigation of all training by the gains from science and new technologies. The technical and vocational education in Senegal was the domain of two different ministries:

- The Ministry of Education was responsible for managing technical education;
- The Ministry of Labour Employment and Vocational Training is responsible for defining and implementing the policy of vocational training.

This system was a bit disadvantageous for TVET because was not having a normal share. It was managed differently by some directions under the ministries in charge and has no autonomy. Finally they created the ministry of Technical and Vocational Education with full power and authority to take in charge all the issues related to training, vocational education and others… TVET in Senegal is divided into two main parts: the technical education and the vocational education and both have good link with the general education.

Vocational training is received either after one has completed general education or when one switches vocational training fields' midstream.

The general objectives of the technical and vocational education in Senegal are to:

- increase the number of qualified people;
- Provide for skilled human resources according to the needs of the productive and service sectors , thus enable the development of industry and the modernization of the primary sector;
- promote know-how, employability and creativity among young people so as to prepare them to become powerful actors in the context of globalization

2.5 Need for technical and vocational education and training

From a global perspective the framework for technology education for any given nation must be drawn from within:

(a) A widely recognized and acceptable national conceptualization of the role of technology and national development, the need to compete favourably in an international market, the elements of technology education curriculum and the emphasis to be given in the school curriculum, a clearly defined and articulated vocational and technical training system that responds to the needs of society, industry and individuals.

(b) A clearly defined national policy framework that has legislative backing, identifies and encourages the development of appropriate technologies which will enable the nation to meet its national development needs as well as remain competitive in a technological

international market, supports comprehensive and continuing vocational technical training, and encourages and stimulates employment creation through self employment in both the formal and non-formal sectors of the national economy.

Kerre and Kwende (1995) specified three types of structures that could be used to implement such a policy: "the traditional approach where TVE is offered as a separate system in its own separate TVE institutions" (p. 3), "TVE is offered alongside general education in the same institutions but still on a separate trajectory" (p. 3), and "an integrated one where TVE curriculum is a requirement for all learners at certain levels and an option at higher levels" (pp. 3-4). They argued for the latter as it offers the widest opportunities possible for learners to pursue either general education or TVE, the demarcation between general and vocational education was minimized as learners experience the interrelationships between theory and practice, and it is feasible to focus on general aspects of education at the lower level with an increasing amount of vocationalization or training as the learner moves to higher levels.

This final point was reiterated in greater detail in **Kerre (1991)** and **Kerre (1996).** The argument is also consistent with that made by **Young (1993):**

"A unified system does not separate academic and vocational routes but recognizes that to fulfil the aims of a highly qualified workforce, a wide range of different combinations of academic and vocational studies need (sic.) to be possible that do not separate students into distinct tracks at 14, 16, or 18". (p. 20)

Bennell (1993) echoed a similar caution about the vocationalization of the curriculum.

Young (1993) outlined four conditions for achieving a unified system as a wide professional consensus in the education community, strategic thinking on the part of industrial leaders and trade unionists, political will on the part of the national government, and a high value placed on education within the culture as a whole. Her final conclusion was that:

"A unified system...is...the only future for any country, whatever its current circumstances. Academic and vocational divisions for all their embeddedness in our culture and our institutions are structures of the past which were developed in response to certain circumstances at a particular time. That time has passed". (Young, 1993, p.34)

Bowles (1993) echoed this caution:

"An occupational skills focus for the school system--particularly at its elementary and secondary levels--will prove an expensive and ineffective productivity development strategy and will compromise the more general objectives of developing the capacity for critical thought, collective action, and further learning throughout life". (p. 45)

Much of the developing world, in particular, has discovered this. The reform of technical education and vocational training is part of the national strategy instituted by Senegal to reduce poverty. This will provide businesses in selected economic sectors and players developing this education with the required occupational and technical qualifications to create value added and increase wealth.

The development of learning will contribute to the development of human capital, enhanced employability of young people (stability, creation, maintenance of sustainable jobs and social insertion) and improved competitiveness of the informal sector through the introduction of an entrepreneurship initiative.

The ultimate outcome of this project is to contribute to the national strategy to battle poverty and to the strategy for accelerated growth instituted by Senegal, by creating the conditions that promote access to employment and increased labour force productivity. Specifically, the goal is to contribute to the availability of skilled human resources tailored to employers' needs and the employability of populations.

2.6 Technical and Vocational Education, a Socio-economic Development Factor

Education in general, technical education and professional training in particular were always considered by the government authorities as priority objectives in the implementation of socio economic development policies. In fact, the allocation of almost a third of the government budget to education and training testified the will of the authorities to promote a real policy in the field of human resources. All the same, the technical and vocational training occupied an important place in the government's will to boost the economy. It was perceived as the basic element in modernizing the social and economic sectors.

Nothing could be achieved permanently in the area of modernizing production systems except for a real effort of adapting qualifications to the economic and social requirements, and a constant invigoration of all training programs with new knowledge drawn from science and technology.

That is why the government experimented and implemented a number of reforms in the educational system over the last twenty years, these were:
- 1971 reform with the first orientation law;
- The innovations of the 1980s;
- The reform recommended by CNREF and promulgated by the 1991 orientation law.

2.7 The different institutions of Vocational Education

The main vocational training facilities in Senegal are:

- CFPT (centre de formation professionnelle et technique),
- The Polytechnic College (Ecole Supérieure Polytechnique: ESP),
- The National School of Secretariat (Ecole Nationale de Secrétariat: ENS),
- The Professional Teaching Center (Centre d'Enseignement Professionnel: CEP),
- The Institute of Cut Sewing and Fashion (Institut de Coupe Couture et Mode: ICCM),
- The Delafosse National Center of Industrial and Commercial Professional Courses (Centre National des Cours Professionnels Industriels et Commerciaux Delafosse: CNCPICD),
- The Center of Artisanal Formation (Centre de Formation Artisanale: CFA), and
- The National Center of Professional Qualification (Centre National de Qualification Professionnelle: CNQP).

2.8 The different degrees and certificates

The main qualifications received upon passing the examination at the end of vocational training are:

- The Certificate of Aptitude for Secondary Technical Training and Professional (Certificat d'Aptitude à l'Enseignement Secondaire Technique et Professionnel: **CAESTP**),
- The Certificate of Aptitude for Middle Technical Training and Professional (Certificat d'Aptitude à l'Enseignement Moyen Technique et Professionnel: **CAEMTP**),
- The Higher Technician Certificate (Brevet de Technicien Supérieur: **BTS**),
- The Technician Certificate (Brevet du Technicien: **BT**),
- The Patent of Professional Teaching (Brevet d'Enseignement Professionnel: **BEP**),
- The Certificate of Professional Aptitude (Certificat d'Aptitude Professionnelle: **CAP**), and
- The Diploma of Technician of Rural Development (Diplôme d'Agent Technique de Développement Rural: **DATDR**). Graduates of the **CAP** and **BEP** may qualify for further diplomas like the BT.

2.9   The different institutions for technical education

The technical education schools were made up of six (6) industrial and/or commercial technical education colleges and one technical college of agriculture. They are also five (5) secondary education colleges (series B) which dealt with (sciences and economics). They are very selective and at the end they deliver the Baccalaureat of Technical Education (BAC T) with the related specialization. Those graduates have good technical and scientific skills and they can go directly to industries as well as for higher studies in the engineering schools. In these technical education schools apart from the (series B) we had the following series:

- E: Technology and mathematics
- F1: Mechanic works or General Mechanics
- F2: Electrical and Electronic engineering
- F6: Biochemistry
- F7: Biology
- G2: Quantitative management techniques.

Up to 1980, we could count among those series:

- F3: Automobile mechanic
- F4: Boiler works and industrial piping
- F5: Metallic construction.

2.10 Vocational Training

The vocational training schools were widely distributed nationally. Each region has at least one training center. However, the structure charged with the vocational training, revealed important disparities. The Dakar region had more than 40% of the schools with about 75% of the total enrolment. It was followed by Thies with about 17% and St-Louis with 15%.

The regions of Louga, Fatick, Kolda and Tambacounda on the contrary have less than 10% of the existing structures. The public vocational training institutions constituted the essence of the system and represented 78% of the network. In fact, the private sector managed only 17% of the schools and the Para-public sector managed 5%.

Concerning the enrolment, important disparities between boys and girls could be noted. The boys constituted 66% of students registered in the vocational training schools.

These sizes were distributed according of the economic activity sectors.

2.10.1 Primary Sector

The initiation centers for horticulture. These schools recruited at the First School leaving Certificate level.

The regional vocational training centers newly created are 5 together:

- The schools for the rural development technical agents in Senegal are 4 (agriculture, forestry, animal husbandry, and fishing).
- The horticulture vocational training center (CFPH of Camberene).

Parallel to these public training structures, there are private institutions composed of diocesan centers (CFA of Nianing, Ndiebel Center, Nguengne, and Ngandiaol), Non-Governmental Organizations (OFADEC, AJAC) and village development associations (ASECAW, FPOB). The number of structures that offered training to the primary sector was reduced if one takes into account the fact that agriculture occupied 80% of production with only 12% of the training schools.

2.10.2 The Secondary Industries

In this sector, the system was characterized by a duality of conventional training in technical and vocational training schools on one hand and a non-conventional training in craft micro-enterprises of production and service on the other hand. The principal vocational sections in the formal system were as follows:

- Electricity,
- General mechanics,
- Civil and construction engineering,
- Automobile and engine mechanics,
- Sheet-iron works and welding,
- Metallic construction,
- Wood works,
- Industrial and Home refrigerating,
- Sewing.

2.10.3 The Tertiary Industries

The importance of this sector which was called *social* by excellence, led the public authorities to set up a relatively dense network. The training provided in these schools concerned a variety of areas such as:

- Education and training,
- Health,
- Security,
- Customs,
- Administration,
- Arts,
- Trade and management,

- Hotel trade and tourism.

The training was provided by public schools. But private promoters were more and more interested in this sector especially in the following areas: secretariat, management, administration, transport.

In 1988, 68 schools in the tertiary sector had been recorded. Among these structures, were 57 schools specialized in the training of execution agents.

2.11 Higher Level

The main higher technical and vocational education schools were the Higher National University, schools of Technology (ENSUT), The Higher National School of Technical and Vocational Education (ENSEPT) and the Polytechnic School of Thies (ESPT). It should be noted that the Faculty of Science and Technology had professional training projects inside its structure. In addition to these schools there are some private schools owned by organizations or companies.

2.11.1 The Higher National University, School of Technology

This school was first created in 1964 under the name of Polytechnique Institute, but later became the University of Technology (IUT) in 1967. In April 1973 IUT became a public school of Dakar University, with a legal status and a financial autonomy. In 1974, IUT became the Higher University School of Technology (ENSUT). It is administered by a School Council composed of government representatives, employers, school staff and students.

2.11.2 Goals

The ENSUT's objectives are:

- The initial training of students for the University Diploma of Technology (DUT at the advanced level + 2 years);
- The complementary training (DUT + 2 years) of students holding a DUT with or without working experience.

The following diplomas are awarded:

- Technology Engineering (DIT);
- Higher Trade and Enterprise Management Studies (DESCAE);
- The in-service training of staff in the enterprises and the services of the private and public sector;
- The technical assistance to enterprises and services;
- The applied research activity and the training of Senegalese and African teachers.

2.11.3 The Training Sections

On the pedagogic point of view, the basic operational unit is the Department. The departments are grouped in two divisions:

** The Industrial Division composed of 4 departments:

- Chemical Engineering and Applied Biology
- Electrical Engineering
- Mechanical Engineering
- Civil Engineering.

** The Tertiary Division composed of 2 departments:

- Tertiary Department
- Computer Work Department.

The recruitment (specific tests for Senegalese, a file for foreigners) concerns those who hold the Advanced level diploma (Baccalaureat) whose option corresponds to the selected department. It should be noted that ENSUT is basically characterized by the flexibility to open or close traditional sections according to job opportunities in the professional sector, as well as to define the contents of training programs. This constitutes a major chance to adapt to the socio-economic context of Senegal and the region.

2.11.4 The Higher School of Technical and Vocational Education (ENSEPT)

It was created in 1979 to replace the old Higher Male Technical Education School of Dakar. Later in January, 1987 it became the Higher Technical and Professional Education School (ENSETP) in a public school with a legal entity and a financial autonomy annexed to the Cheikh Anta Diop University of Dakar. With the exception of the Order in Council adopted by the University Assembly, 1'ENSETP functions on the same basis as the other national schools annexed to the University. Government representative, employers, school staff and students are members of ENSETP Administration Council.

2.11.5 Goals

The main objectives of ENSETP are:

- The training of teachers;
- Responsible for teaching technical theoretical and practical subjects in the technical and vocational schools (colleges, high schools, professional training centers, etc.);
- Responsible for assuring school and professional orientation of teachers and of schools (inspection specialist);

- Organizing refresher courses and follow-up trainings for teachers of the public and private sectors;
- The pedagogic assistance of researching and disseminating means, methods and pedagogic support, aiming at improving the quality of the training.

At the end of the training, ENSETP awards the following diplomas:

- **CAEMTP**: Certificate of Aptitude in Technical Practical Intermediate Education (Advance level + 4 years) for intermediate education teachers;
- **CAESTP**: Certificate of Aptitude in Technical and Professional Secondary Education (BAC + 4 years) for the secondary school teachers;
- **CAFPC**: Certificate of Aptitude in the functions of Guidance and Counselling (A/L + 5 years) for the personnel responsible for school and professional orientation.

2.11.6 Training Sections – Recruitment

From the pedagogic point of view, ENSETP has five departments:

- Home Economics
- Guidance Counselling
- Sciences and Economic Techniques
- Administrative and Secretarial Techniques
- Sciences and Industrial Techniques.

The recruitment (specific tests for Senegalese, school files for foreigners) is carried out at various levels among those who hold diplomas in agreement with the entry profile of the selected sections:

- With advanced level education in home economics (serie D) science and industrial techniques (serie E and F) the students are entitled to entrance into the 1st year of university;
- With DUT or BTS Diplomas, students are admitted into 3rd year and into 4th year for students with University bachelor's degree especially for guidance counsellors, Science and economic techniques.
- Students with master's degree or A3 engineer diploma are admitted into 5th year. ENSETP, the unique school that offers training of trainers courses in technical and professional education in Senegal has the opportunity to train all the trainers of this sector, in-all-fields.

2.11.7 The Politechnique School of Thies

The Polytechnique of Thies (EPT) was created in 1973 with the financial AID of Canadian Cooperation and placed under the military administration. In 1992, EPT was annexed, like most of the national schools, to the University. Its implementation order foresees the setting up of an Administration Council in which the government, the employers, school staff and students will be represented.

The objectives of EPT are:

- To train design engineers (A/L + 5 years);
- To provide a doctorate training in engineering sciences;
- To carry out research in all engineering fields in order to promote development activities.

2.12 Organization of certification system in the TVET
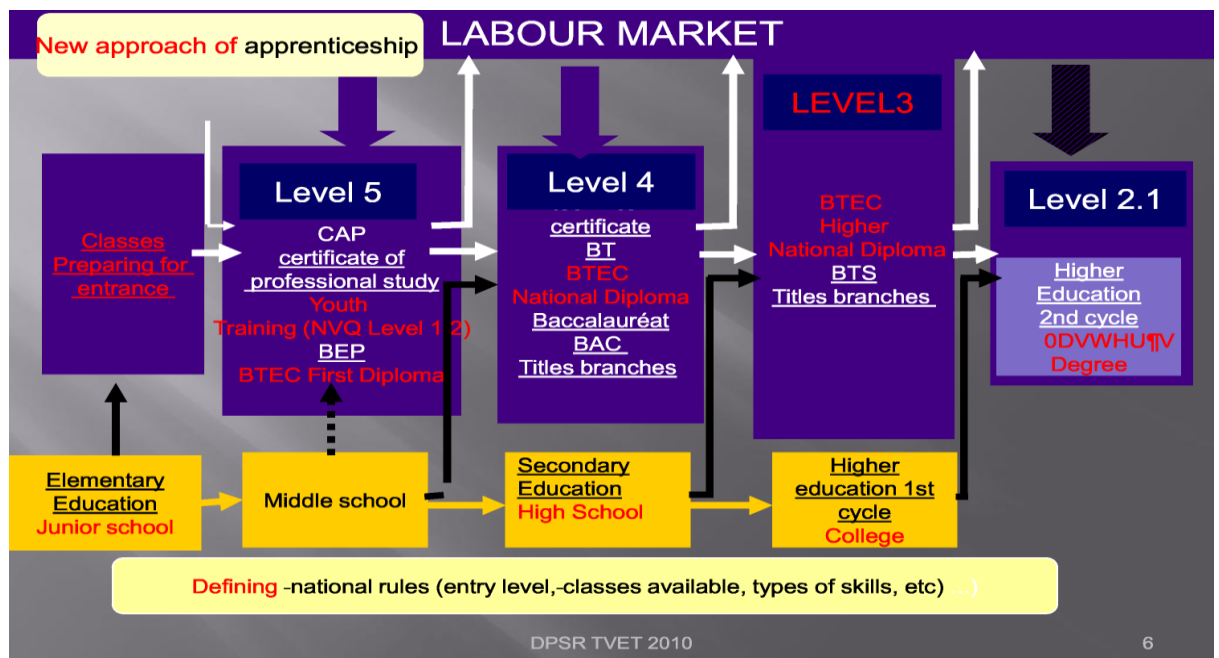
Figure 3: TVET Certification System in Senegal

2.13 Scientific, Technical and Vocational Education of girls: an Imperative for the future

"In a world increasingly shaped by science and technology, scientific and technological literacy is a universal requirement. it is vital to improve scientific and technological literacy among women and girls, whose unique educational function within the family makes them such a major determinant of the attitude of present and future generations" **Federico Mayor.**

Science and technology have been a determining factor in human history since time immemorial, contributing to economic competitiveness on a global scale and providing essential services, infrastructure and effective health care. Currently the gender disparities in science and technology are unacceptably high; we need to address this imbalance pro-actively, not just because it's right to do so, but because if we do not, we will simply not have adequate human resources to deal with our problems. There is no doubt that improving the quality of general education, and of science education in particular, is essential in building science and technology capabilities in Africa. The recognition of women's roles should be given a platform by being considered a major part of what South Africa's Deputy President Thabo Mbeki has called "The African Renaissance". Women have been given a worthless education in the past designed to "domesticate" them. Traditional authority structures hold women back and conspire to conceal women's contributions to the economy. This leads to poverty much greater than a financial one: lack of knowledge or access to knowledge and being on the periphery of decision making. Poverty in itself is an illness with a multiplier effect of social and medical disease and is the antithesis of well being creating a downward spiral of dependence and desperation. These diseases of poverty are preventable, showing how interconnected all aspects of development are. It is in this context that the role of girls and women in the scientific development is seen as a crucial means of building and reinforcing the continent's scientific capacity. Women in Africa constitute more than half of the population and their significant under-representation in science and technology deprives the continent of a substantial input. Many factors have influenced, and continue to influence the status of science and technology and the role of women in its definition, development and application. Such factors are both endogenous and exogenous and they become manifest at both the macro and micro levels of science and technology. Traditionally women have been excluded from the scientific and technological development process, having a larger role in family life. In addition, despite their traditional knowledge system, women in Africa have been unfairly considered "scientifically illiterate". Yet today's science is no longer in the test tube, but in the home and in the community, and since we are now concerned with subjects like bio-ethics which brings science into a close relationship with philosophy we need to involve all sectors of society. For a more equitable future, it is essential that women participate in and benefit in the process of development from the design level to the application stage. This can only be achieved if girls and young women are encouraged to study and work in science and technology areas. When educating a boy one educates one person, whereas educating a girl educates a whole family. Girls' scientific, technical and

vocational education is therefore crucial to raising the scientific and technological literacy of the next generation of African children in general, who may not all receive formal schooling. The level of their education will determine whether they can apply the benefits of science in their everyday lives by reading news items, understanding directions for using fertilizer, promoting effective community health practices or appreciating the benefits of family spacing. Women's inclusion and participation in technical and vocational education and training (TVET) are important objectives within the Education for Employment (EFE) program, currently being implemented in Senegal. In fact, strengthening the TVET sector to be better aligned with the needs of industry is an opportunity to give women access to employment in growing and emerging economic sectors.

As part of the EFE Senegal, **Cégep Limoilou** is supporting the "Centre d'entreprenariat et de développement technique" (CEDT) to develop and deliver a new advanced diploma program in Geomatics, in response to the labour market needs in Senegal. This training is very timely and compliments efforts to develop the National Geomatics Plan for Senegal. The new training program is competency-based and was validated by the Ministry of Technical and Vocational Education and Training. The first cohort of enthusiastic students has been recruited, with young women being in the majority!

2.13.1 Compelling reasons to promote girls' participation in scientific, technical and vocational education:

1) The nature of the job market is changing, and women and girls can no longer rely on the traditional, limited range of occupations.

2) With the increase in the number of technical occupations women will continue to suffer from unemployment, unless they have the ability to access them

3) the application of technology pervades our daily lives and women's increased participation in this field can provide important knowledge in areas of food security, health care and community needs in general and

4) African women account for more than 50% of their national population and as a human resource cannot be left at the margin of economic development of their countries particularly during this period of social, cultural, and political upheaval in the continent

2.14   The new reform

2.14.1 New guidance

With the reform we use the term of "training", rather than "education", because it's likely to integrate the various formal, non formal and informal pathways to skills acquisition into a coherent training system new teaching approach: skills based approach. It is a method of teaching which focuses on skills needed by the learner to exercise a given profession; It mainly includes five steps:

1. Sector Studies

2. Preliminary studies

3. Analysis in a work situation

4. Writing reference (skills, training, certification)

5. Implementation of programs

2.14.2 A field extended to apprenticeship

This will consist in an integration of apprenticeship, more specifically, the non formal apprenticeship (around 400 000 people). The approach is the following one:

1. Identifying the training needs

2. Writing programs

3. Choosing apprentices and trainers

4. Implementing training programs

- 80% time in the workshop

- 20% in resource centers

The national program plan to finance:

- 3000 apprentices in 2011

- 6000 in 2012

- 10 000 each year from 2013

2.15 The difficulties faced by the technical school teachers in Senegal

Teaching technical subjects in Senegal is not an easy task. The teachers of technical education and vocational training face many problems while doing their work. These difficulties are mostly related to the administration and the finance, to the poor condition of their work environment (the school and all it involves). According to earlier findings in similar studies we have seen that the classroom difficulties may be related to: classroom management, learners' behaviours (attendance, discipline, performance based ...), availability and effective use of teaching materials, the curriculum, lack of proper motivation

(incentives). The difficulties may arise from the Special teaching and assessment strategies, human supports, and/or individualized equipment required enabling a student to learn and to demonstrate learning.

2.15.1 The difficulties related to the students` behaviours

Teachers faced many difficulties in their classroom. These difficulties may be related to the management of the class and the behaviours of the students. According to the research findings of Sheets and Gay (1996), described the widespread discipline problems and disruptive behaviours common in high school classrooms. Overcrowded classrooms, made up of diverse groups of students of varying ethnicity and socioeconomic characteristics, showed extreme levels of disruptions. Canter (1997) estimated that secondary school teachers spent thirty to fifty percent of their in-class time handling behaviour problems. Most of these problems were relatively minor disruptions which originated in the classroom, and were often interpersonal in nature. The disruptive student might ",...challenge teacher authority, interrupt, talk out of turn, respond loudly, argue, react emotionally, or socialize in class, (Sheets and Gay,1996, p.86). Sometimes the difficulties arise from the lack of mutual understand between the teachers and the students. In this case it is necessary to create a student-teacher conference; teacher's planned dialogue with an individual student about the student's learning. Conferences offer teachers opportunities to get to know their students' strengths and the challenges they face in relation to specific learning strands or expectations, to monitor their progress, and to plan future instruction based on identified needs and interests. To overcome some difficulties of this type the teachers must be in proper observation; the ongoing process of watching, listening, and being attuned to students' behaviour, emotional state, interests and abilities, patterns of development, and progress in learning in order to meet the needs of students and assess and evaluate their development and learning.

2.15.2 The difficulties related to the classroom instruction

The classroom instruction involves many things like the teaching-learning process and the utilization of the teaching-learning materials and all the actions that make the process effective. This process is not without difficulties. The difficulties may be related to the teaching-learning process like the preparation and organization of the contents, the proper utilization of the teaching materials, it may related also to the lack of proper pedagogical supports like books and equipments. The lack of laboratories and adequate materials that reflect the real environment of the industries is also a problem in the technical education and

this problem may lead the class lectures to be more theoretical than practical. The difficulties in this domain may be related to the evaluation and the assessment process. This is a very crucial issue as said in the journal of the Ontario ministry of education: "Teachers have a leading role to play in the implementation of the seven fundamental principles. On a daily and hourly basis, teachers make professional judgements that ensure effective implementation of these principles, making decisions with respect to individual students and groups of students that have profound implications for them. How students feel about themselves as learners and whether they enjoy learning and strive for excellence are closely related to their teachers' professional skills both in differentiating instruction and assessment and in helping students understand how they can improve. Teachers create environments in which all students feel valued and confident and have the courage to take risks and make mistakes. In their important professional role, teachers show students that they care about them, and model a love of learning that can deeply influence their lives. Teachers' professional judgements are at the heart of effective assessment, evaluation, and reporting of student achievement". It is also important to have a teacher moderation; a process for ensuring that the assessment of student learning and the results of assessment and evaluation are comparable across classes and/or schools. In teacher moderation, teachers examine student work together to share beliefs and practices, enhance their understanding, compare their interpretations of student results, and confirm their judgements about a student's level of achievement. Teachers might also look at the assignment that was given and analyse its effectiveness in relation to the learning achieved by the students. Sometimes the students are not motivated in learning the subjects because of not understanding or not having good marks. It is good to have some standards or specific descriptions of successful attainment of learning goals developed by teachers on the basis of criteria in the achievement chart, and discussed and agreed upon in collaboration with students that are used to determine to what degree a learning goal has been achieved. Criteria describe what success "looks like", and allow the teacher and student to gather information about the quality of student learning. Teachers must have also an instructional approach that involves breaking down tasks so that students can concentrate on specific, manageable objectives and gradually build understanding and skill, with the aid of modelling by the teacher and ample opportunity for practice.

2.15.3 The administrative and financial difficulties

Technical teachers face many difficulties related to the administration. The administrative difficulties may be from the government or directly from the school administration. Among

these difficulties there are: the lack of pre-service training for some category of teachers and lack of in-service training for almost all, the lack of proper infrastructures for conducting the technical education programmes. One of the major problems faced by the teachers is the lack of proper consideration of technical and vocational education in the policy of education of the government this leads to the lack of allocation of enough share of the resources to the technical education and the vocational training. The technical education is a bit lagging behind comparing to the general education. In addition to the administrative difficulties there are financial problems faced by the technical teachers in secondary schools in Senegal. The teachers have low salary and are not getting enough supports from financial institutions. The government is not providing allowances for housing and transport to the teachers. This may be a source of difficulties also.

2.16 Conclusion

The education system of Senegal being of model based on the French system is modified to meet the realities of social and economic environment of Senegalese nation. Some problems arise from the lack of proper resources and the reorganization according to the social environment and the economic situation of Senegal. Beside all the administrative problems, the teachers face many other difficulties related to the finance and to their working conditions. Some problems are from the students` behaviours and the working environment of the teachers. The teaching-learning process in the technical and vocational education is mixed up with all these constraints. The government and all the actors involved should try to reduce them for the better outcomes of the technical education and vocational training. There is a major problem associated with high cost of constructing new schools, equipment, maintenance and the provision of consumable training materials. Routine and preventive maintenance have also constituted persistent problems.

Effective technical and vocational education and training for industrialisation can only happen if all the relevant stakeholders (Governments, training institutions, parents and guardians, development partners and employers), play their role. TVET can be synonymous to the backbone of quality life as it contributes significantly to promoting the interests of individuals, enterprises, economy and society. By making individuals employable and informed citizens, human resources development through TVET activities contributes to economic development and to achieving full employment and promoting social inclusion. TVET also helps individuals to gain access to decent work and good jobs, and escape poverty and marginalization. Human resources development and training also underpin the

fundamental values of society: equity, justice, gender equality, non discrimination, social responsibility, and participation.

CHAPTER III

METHOD AND PROCEDURE

The chapter includes methods and procedures used for the study.

3.1 Design of the study

Descriptive method of research was used in this study.

3.2 Population

The technical and vocational school teachers at higher secondary and secondary levels of the district of Ziguinchor and Dakar were the population and both male and female were included, in this study. In ziguinchor, teacher of "bloc scientifique et technique" (BST) and those of "société de develpement economique de ziguinchor" (SODEZI) and "college d`enseignement moyen et technique" (CEMT) were the population of the study. In Dakar teachers from "Lycee Technique Industriel Maurice Delafosse" (LTID) and from "lycee Limamou laye de Pikine" were included in the population.

3.3 Sampling

36 teachers were selected as a sample through convenience sampling because the exact lists of all the secondary school and higher school teachers were not available and only those teachers who were willing to respond were selected. Six technical teachers were selected from BST; two are from CEMT and three from SODEZI. These were selected from the different schools of the district of Ziguinchor. In total eleven technical teachers were selected from the district of ziguinchor. The remaining twenty five teachers are been selected like that: fifteen from lycee technique industriel Maurice Delafosse and ten from lycee limamou laye de pikine. The latest are all from Dakar. The total sample was 36 technical teachers.

3.4 Tools for data collection

A structured questionnaire was used as tool for data collection in this study. The questionnaire was prepared on 5 point Likert type scale and there were some open ended questions. The questionnaire covered some specific areas contained in the teaching-learning process like classroom instruction problems, the students' behaviours, the administrative and financial problems and questions concerning some other problems that may be faced by the technical teachers of technical secondary schools and technical high schools in Senegal.

3.5 Data collection procedure

Questionnaires were sent by email to the volunteers, one set in Dakar and another set in Ziguinchor. The volunteers collected the data, scanned and sent back the filled in questionnaires by email again.

3.6 Techniques of data analysis

For analysis of the responses *chi square* (χ^2) and weighted average were used. SPSS was used for analysis. Value of χ^2 was checked at 0.05 level of confidence. The open ended questions were analysed in narrative way.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

4.1 Introduction

This chapter deals with the analysis and the interpretation of data collected for the study.

The questions are grouped into three tables according to the domain of interest. The data was collected through a questionnaire made of open-ended type questions and five points likert scale type questions. The rating to the level of acceptance of the statement was done accordingly: (1) indicates the lowest level that means strongly disagree, (2) corresponds to disagree, (3) undecided or neutral, (4) agree and the last one (5) means strongly agree. The tables are categorized into: the classroom instruction related difficulties, the student behavior related difficulties and the administrative and financial related difficulties.

The responses are grouped in the tables in an organized manner and weighted average was used to see the overall opinion of the respondents toward the different statements. Weighted Average (WA) is interpreted as follow: (i) WA $\geq$ 4.5 is "Strongly Agree (SA)" and 4.5 > WA $\geq$ 3.5 is "Agree (A)", (ii) 3.5 > WA $\geq$ 2.5 is "Undecided (U)" and (iii) 2.5 > WA $\geq$ 1.5 is "Disagree (D)" and WA < 1.5 is "Strongly Disagree (SD)".

The detailed analysis is given in the following papers.

4.2 Analysis

Table1: table showing the Classroom instruction related difficulties

Q	Statement	1	2	3	4	5	W/A
1	To what extent can you provide an alternative explanation for example when students are confused?	3	1	0	10	7	3.809
2	To what extent can you use a variety of assessment strategies?	0	0	9	7	0	3.437
3	To what extent can you implement alternative strategies in your classroom?	2	0	8	5	2	3.294
4	To what extent can you craft good questions for your students	0	0	0	11	9	4.45
5	To what extent can you implement alternative strategies in your classroom?	0	4	4	8	5	3.667
6	Teachers` guide (books)for technical subject is clearly labeled	1	2	2	10	6	3.857
7	How much can you do to get students to follow classroom rules?	0	0	3	12	5	4.1
8	The syllabus for technical subjects does not prepare one for the world of work	7	2	5	5	2	2.667
9	The technical course is mostly theory rather than practical work in your school	2	2	4	7	5	3.55
10	Technical school should prepare learners for university rather than to go into jobs	11	1	4	2	3	2.285
11	The training facilities at school are sufficient to train learners adequately	4	9	2	5	0	2.4
12	The materials are available for teaching technical subjects	2	9	6	0	3	2.65
13	The practical subjects reflect the real working environment	1	7	5	3	3	3
14	The number of teacher is sufficient for technical subjects	6	5	2	2	6	2.857
15	The teacher at your school are overloaded	4	7	3	5	2	2.714
16	Teachers have sufficient documents for lesson preparation	4	8	5	4	0	2.428
17	Time allocated to theoretical subjects is sufficient	0	4	6	2	8	3.7
18	Time allocated to practical subject is sufficient	1	10	2	4	3	2.7

To the question: "to what extent can you provide an alternative explanation for example when students are confused?" , the majority of the respondents agreed that they can provide alternative explanations to make them understand.

The majority of the respondents are divided when they were asked to what extent they can use a variety of assessment strategies. They were also divided when they were asked to what extent they can implement alternative strategies in their classroom.

Most of the respondents agreed that they can craft good questions for their students, can make them follow the rules and regulations of the class and they agree also that they can implement alternative strategies in their classroom.

The majority of the respondents agreed that the teachers `guide (book) for technical teachers is well formulated and agreed that the technical courses are mostly theory rather than practical in their school.

To the statement: ''the syllabus for technical subjects does not prepare one for the world of work'', the respondents were divided and most of them disagreed that technical school should prepare learners for university rather than to go into jobs and disagreed also to the training facilities at school are sufficient to train learners adequately.

The practical subjects reflect the real working environment and the materials are available for teaching technical subjects for these statements, the respondents are divided. Majority of the respondents are divided when we asked if the number of teachers is sufficient for technical subjects and if the teachers are overloaded in their schools.

The respondents disagree that teachers have sufficient documents for lesson preparation. The respondents are divided about the time allocated to practical subjects but they agreed that the time to theoretical subjects is sufficient.

Table2: table regarding the Students` behaviours related difficulties

Q	Statement	1	2	3	4	5	W/A
1	Being friendly with pupils often leads them to become too familiar	2	5	3	7	4	3.285
2	Students often misbehave in order to make the teacher look bad	1	3	10	7	0	3.095
3	You have control about disruptive behavior in the classroom	0	2	0	14	5	3.809
4	You can get students to believe that they can do well in school work	0	0	2	6	13	4.523
5	Too much time is spent on guidance and activities and too little time on academic preparation	3	3	7	3	1	2.764
6	The importance attached to academic subjects at schools resulted in many learners not taking technical subjects	1	0	5	8	7	3.190
7	People generally have low opinion of learners that do technical subjects	0	12	4	3	1	2.65
8	The learners should be properly guided and not misled when selecting courses at school	0	0	1	8	12	4.523
9	Students doing technical education are not very much motivated	0	3	8	2	8	3.333
10	Students feel comfortable with the course contents	2	4	4	9	2	3.238
11	Students like the technical subjects very much	0	4	9	6	2	3.285

The table above is about the responses of the selected technical teachers to the questions concerning students` behaviours in the classroom.

Most of the respondents are divided when we say that "being friendly with pupils often leads them to become too familiar" and "Students often misbehave in order to make the teacher look bad" but most of them also agreed that they have control about disruptive behavior in the classroom. The respondents strongly agreed that they can get students to believe that they can do well in school work and that the learners should be properly guided and not misled when selecting courses at school.

Most of the respondents are divided when asked if too much time is spent on guidance and activities and too little time on academic preparation, if the importance attached to academic subjects at schools resulted in many learners not taking technical subjects and also if the students like the technical subjects very much and if the students feel comfortable with the course contents. The respondents are still divided when asked if the students like the technical subjects very much and the students doing technical education are not very much motivated and also if the people generally have low opinion of learners that do technical subjects.

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Table3: table regarding the Administrative and financial related difficulties

Q	Statement	1	2	3	4	5	W/A
1	Often a staff member, administrator or colleague teacher is available to help you when you have difficulties your technical classroom	0	2	4	11	4	4
2	your school provide you with a computer for your exclusive personal use	9	12	0	0	0	1.571
3	The government should give enough resources to technical education.	0	0	1	6	14	4.619
4	Student governments are a good safety valve but should not have much influence on school policy	2	0	5	9	3	3.578
5	Your principal feels well about technical subjects offered at your school	0	2	2	13	3	3.85
6	The administrator in your school is involved in technology professional development	1	2	4	5	9	3.904
7	The number of teachers is sufficient for technical subjects at your school	0	5	5	6	5	3.523
8	Teachers have enough training for teaching the technical subjects	4	4	9	3	1	2.904
9	Teachers have good salary	12	3	6	0	0	1.714
10	Teachers have good facilities with financial institutions	4	8	6	3	0	2.380
11	Teachers have good supports for transports	12	5	4	0	0	2
12	Teachers have good supports for housing and others	10	6	3	0	2	2.095
13	Technical teachers and general education teachers have same opportunities	5	1	4	5	6	3.285
14	Your school provides teachers with time for learning and professional development, technology literacy skills	2	5	5	7	2	3.095
15	You had professional development training related to technology within the last 12 months	8	11	2	0	0	1.714

The table 3 above is concerned with the responses of the selected technical teachers to the questions regarding the administrative and financial related difficulties. Among the different statements given, we can see that the respondents disagreed about some topic that are: the teachers have good salary, they have transport and housing allowances, they have good facilities with financial institutions and they disagree also that their school provide them computer for their exclusive use. They disagree that they had professional development training within the last 12 months.

Most of the respondents agreed about that often a staff member, administrator or colleague teacher is available to help them when they have difficulties in their technical classroom and about that their principal feel well about technical subjects offered at your school. They agree also that the administrator in their school is involved in technology professional development and that the number of teachers is sufficient for technical subjects in their school. The majority of the respondents strongly agreed that the government should give enough resources to technical education.

 The respondents are mostly divided to the following statements:

Your school provides teachers with time for learning and professional development, technology literacy skills. Technical teachers and general education teachers have same opportunities. Teachers have enough training for teaching the technical subjects.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS AND

RECOMMENDATIONS

5.1 Summary

The purpose of this study was to determine the difficulties faced by technical teachers in Senegal and to see if those difficulties may be different from the one seen in some other places according to previous studies.

The specific objectives were to:

> 5) Find out the difficulties faced by technical teachers at secondary school level in Senegal.

Technical school teachers of the district of Ziguinchor and of Dakar were the population.

36 teachers were selected as the sample by stratify sampling method. Six (06) technical teachers were selected from BST; two (02) are from CEMT and three (03) from SODEZI. These were selected from the different schools of the district of Ziguinchor. In total eleven (11) technical teachers were selected from the district of Ziguinchor. The remaining twenty five (25) teachers were selected in Dakar like that: fifteen (15) from Lycee Technique Maurice Delafosse and ten (10) from Lycee Limamou Laye de Pikine. The data was collected from the sample by volunteers and sent back by email. Weighted average and chi square were used for data analysis. The open ended questions were analysed in a narrative way. Finally conclusions were made and some recommendations were given.

5.2 Findings

After analyzing the data, following findings emerged:

1) Teachers don`t have sufficient documents for lesson preparation.
2) The syllabus for technical subjects does not prepare one for the world of work
3) The training facilities at school are not sufficient to train learners adequately
4) The learners should be properly guided and not misled when selecting courses at school and should be given opportunity of pursuing their studies at higher levels.
5) The government is not giving enough resources to technical education
6) Student governments are a good safety valve but should not have much influence on school policy
7) Teachers do not have good salary
8) Teachers do not have good facilities with financial institutions

9) Teachers do not have good allowance for transports, housing and others

10) Teachers do not have professional development training related to technology within the last 12 months.

11) Teachers don`t face many problems related to students behaviors

12) The equipments are obsolete and do not reflect the work environment

13) Majority of the teachers can use alternative methods to make students understand.

14) Most of the teachers can craft good questions for their students,

15) Majority of the teachers can make the students to follow the rules and regulations of the class.

16) The majority of the teachers can implement alternative strategies in their classroom

The analysis of the open ended questions reveals that:

- The disruptions in the academic years are due to no respect of the agreements between the government and the teachers` syndicates.

- The same problem also come from the lack of dialogue between the school`s administration and the students governing board.

- The government is not assuring the pre-service training for majority of the teachers and the in-service training is rare.

- The infrastructures are not sufficient and the existing ones are not well equipped.

- The present equipments are obsolete and do not reflect the real environment of the industry.

- The syllabi are not up to date. Many new and important subjects and methods (i.e: the use of simulator and software) are not included yet in the program.

- The schools are not linked with the industries and majority of the teachers don`t know the reality in the industries.

- The government is not organizing surveys to know the current situation of the technical education and the vocational training in Senegal.

5.3 Conclusions

According to the findings, the conclusion are divided into three distinct parts showing the statements in which the majority of the teachers disagreed, in which the majority are divided among them and the last part where they agreed.

1) In these statements the majority of the respondents have no problem:

- In providing alternative explanations when the students are confused

- In using variety of assessment strategies

- To craft good questions for students

- To implement alternative strategies in their classroom

- To get the students t follow the classroom rules and regulations

- To control disruptive behavior in their classroom

- To motivate students in their classroom so that they can do better in school work

- To get help from a colleague or an administrator when they face difficulties in their technical classroom

- To be provided time by their school for training and professional development

2) The majority of the respondents are divided in the following statements

- How they can use variety of assessment strategies.

- If they can implement alternative strategies in their classroom.

- If the syllabus for technical subjects does not prepare one for the world of work

- If the practical subjects reflect the real working environment

- If the materials are available for teaching technical subjects for these statements

- If teachers is sufficient for technical subjects and if the teachers are overloaded in their schools

- If the time allocated to practical subjects is sufficient

- If being friendly with pupils often leads them to become too familiar

- If students often misbehave in order to make the teacher look bad

- If too much time is spent on guidance and activities and too little time on academic preparation

- If the importance attached to academic subjects at schools resulted in many learners not taking technical subjects

- If the students like the technical subjects very much

- If the students feel comfortable with the course contents.

- If the students doing technical education are not very much motivated

- If the people generally have low opinion of learners that do technical subjects.

- If teachers have enough training for teaching the technical subjects.

- If technical teachers and general education teachers have same opportunities.

- If the school provides teachers with time for learning and professional development, technology literacy skills

3) The majority of the respondents have problem with the following statements.
   - Their administration does not provide them with computer for their exclusive use.
   - Low salary
   - Lack of housing facilities
   - Lack of transport allowance
   - Insufficiency of training and pre-service training
   - Insufficiency of resources allocated to the technical and vocational education by the government
   - Lack of facilities with financial institutions.
   - Lack of professional development and in service training.

Technical teachers in Senegal don`t just have difficulties, they have also some advantages as seen in the following statements and they can value those advantages for the better practice of their duties and for the development of their students in particular.

5.4 Recommendations

On the basis of the findings following recommendations may be made for solving the majority of the difficulties faced by the technical school teachers:

1) The government should increase the salary of the teachers to a satisfactory level.
2) The government should provide housing facilities and transport allowance for the teachers.
3) The government and the school administration should provide sufficient training to the teachers for their professional development.
4) The government should allocate enough resources to the technical education and the vocational training.

According to the findings the following recommendations may be made for problems faced in the technical education and the vocational training:

1) The government should build new infrastructures
2) The technical schools should acquire new and modern equipments that reflect the environment of the industry.
3) The government and the school administrations should work to update the syllabi.
4) The government must assure pre-service and in-service training for the teachers.

5) The school administrations must organize some programs to train teachers in new technologies.

6) The school administration should work in close collaboration with industries and organize some industrial tour for teachers a well as students to show them the real work environment.

7) The government should make new policies that facilitate access to financial institutions for teachers.

8) The school administration and the government should motivate students in doing TVET like before by giving some prizes and sometimes financial aids.

9) The administration should harmonize the time for theory and for practical subjects

10) School administration should encourage and facilitate the use of simulators and software like Auto-CAD and others teachers and for students.

11) The government should reduce the gap that exists between the teachers that are government service holder and the one that are under contract.

12) The government should introduce intense foreign language course (i.e: English) in TVET program that will help students to open up to the world.

13) The government and its partners should regularly conduct survey to know the situation that prevails in the education system and to adapt to new changes.

14) The government should have a long term plan that will modernize the education system

15) The government should come in common consensus with the different syndicates of the teachers to avoid disturbances in the academic year.

16) The government should give more importance to continuing teachers and staffs training.

17) Professional development for teachers and staffs should be taken into consideration by the government and also technological growth should be given more importance.

5. 4. 1   Recommendations for further study

Following further studies are recommended:

1) Due to time constraints, this study was delimited to the schools of two districts that are Dakar and Ziguinchor. It may be found that there is an influence of location in the other schools of different districts. So it is suggested that a study may be conducted with more variety of sample.

2) Most of the schools selected are very old and they are mostly concerned with industry and commerce. A further study conducted in the industrial and mining school (Kedougou) and also in the new agricultural school (located in Bignona) may bring out new findings.

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APPENDIX A

Dear respondents,

This questionnaire is regarding the research study that is being conducted in order to identify the problems faced by technical teachers in school in Senegal.

After carefully reading the statements you are requested to give the appropriate number.

Your cooperation will be highly appreciated.

<u>Biographical Details:</u>

Gender: Male/ Female

Age in years:

Qualification:

Experience in teaching:...........................years

Subjects:

School:

<u>Part A:</u>

Use the following scale to answer the questions below. Put on a tick mark in the corresponding number, according to your agreement about the statements.

1	2	3	4	5

1= strongly disagree   2=disagree   3=neutral   4=agree   5=strongly agree

APPENDIX B

1. Classroom instruction:

No	Statement	1	2	3	4	5
1	To what extent can you craft good questions for your students					
2	How much can you do to get students to follow classroom rules?					
3	To what extent can you use a variety of assessment strategies?					
4	To what extent can you provide an alternative explanation for example when students are confused?					
5	To what extent can you implement alternative strategies in your classroom?					
6	Students are usually not capable of solving their problems through logical reasoning					
7	Teachers` guide (books)for technical subject is clearly labelled					
8	Technical school should prepare learners for university rather than to go into jobs					
9	The syllabus for technical subjects does not prepare one for the world of work					
10	The training facilities at school are sufficient to train learners adequately					
11	The technical course is mostly theory rather than practical work in your school					
12	The materials are available for teaching technical subjects					
13	The practical subjects reflect the real working environment					
14	The number of teacher is sufficient for technical subjects					
15	The teacher at your school are overloaded					
16	Teachers have sufficient documents for lesson preparation					

APPENDIX C

2. Students behaviours:

No	Statements	1	2	3	4	5
1	Students often misbehave in order to make the teacher look bad					
2	Too much time is spent on guidance and activities and too little time on academic preparation					
3	The importance attached to academic subjects at schools resulted in many learners not taking technical subjects					
4	People generally have low opinion of learners that do technical subjects					
5	The learners should be properly guided and not misled when selecting courses at school					
6	Students doing technical education are not very much motivated					
7	Students like the technical subjects very much					
8	Students feel comfortable with the course contents					
9	You have control about disruptive behaviour in the classroom					
10	You can get students to believe that they can do well in school work					
11	Being friendly with pupils often leads them to become too familiar					

APPENDIX D

3. Administrative and financial difficulties:

No	Statement	1	2	3	4	5
1	often a staff member, administrator or colleague teacher is available to help you when you have difficulties your technical classroom					
2	your school provide you with a computer for your exclusive personal use					
3	The government should give enough resources to technical education.					
4	Student governments are a good safety valve but should not have much influence on school policy					
5	Your principal feel well about technical subjects offered at your school					
6	The administrator in your school is involved in technology professional development					
7	The number of teachers is sufficient for technical subjects at your school					
8	Teachers have enough training for teaching the technical subjects					
9	Teachers have good salary					
10	Teachers have good facilities with financial institutions					
11	Teachers have good supports for transports					
12	Teachers have good supports for housing and others					
13	Technical teachers and general education teachers have same opportunities					
14	Your school provides teachers with time for learning and professional development, technology literacy skills					
15	You had professional development training related to technology within the last 12 months					

APPENDIX E

Part B:

Please briefly answer to the questions below.

1) What are some of the setbacks/problems that you encounter with technical/technology education at your school? ....

2) Do you think the syllabus is relevant and teaches what is supposed to be known by the students? .... If you could redesign the syllabus, what would you include in it? ....

3) What measures the government can take to avoid disturbance in the school system?... .... What are the main problems that give reason to students to go on strike? ....

4) What are the main problems that give reason to teachers to go on strike? ....

5) What are the new challenges faced by technical teachers? ....

6) What additional supports do you need from the government? ....

7) What measures the government can take to avoid disturbance in the school system?... ....

8) What additional supports do you need from your administration? ....

9) What are your suggestion/comments for avoiding teachers strike during the academic year? ....

10) Do you have any additional comments/suggestions you would like to add? ....

I take this opportunity to thank you for your time and efforts to provide information for the well going of this research work.

Ousmane SADIO (researcher)