

# The Problem of the Training of Students in Secondary Technical Schools in the City of Likasi

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**Abstract:** *Technical education, whose main mission is the theoretical and practical study of science, arts and crafts, to prepare learners for the different trades of professional life; presents essential characteristics that distinguish them from general education,. These include the following aspects: - Preponderance of practical work in workshops and laboratories; - Theories oriented towards practical applications; - Programs depend on the particular needs of each environment. Therefore, for a technical secondary school to fulfill its mission properly, it must be modestly equipped, according to the expectations of the programs in force otherwise the products out of the schools not equipped and under equipped have deficiencies in the exercise their professions, and all the consequences that this generates in society; this is indeed the case of the majority of technical secondary schools in the city of Likasi. Thus the legislator should have a watching eye in granting the approval and the operating authorization of the technical schools.*

**Keywords:** Problem, School, Technical, Training, Student

## 1. Introduction

It is not clear that the ecocentric contributes to the development of man and the development of a society and, through his primary mission, the school is the main source of knowledge and knowledge to achieve progress.

According to the mission conferred on the school we can distinguish two types of lessons namely: General education and Technical and vocational education

Depending on the degree or age of the trainees; we distinguish:

- Nursery education
- Primary education;
- Secondary education, including general humanities and technical and professional humanities,
- Higher and university education.

The first category, the general education, as well as technical and vocational education, are located exactly; in the Congolese education system in secondary and higher education.

Speaking of technical and vocational schools, they have a primary mission to provide learners with the specific and necessary knowledge specific to an area of professional life.

With regard to the technical schools of the Democratic Republic of Congo and more particularly those of the city of Likasi; do they respond to their mission? In our opinion, for a technical or vocational school to fulfill its mission, it must have a good infrastructure and be sufficiently equipped; otherwise, we think the answer is no

Most of the technical and vocational schools in the city of Likasi are semi-equipped or non-equipped. In the course of this relationship we will discuss in turn the curricula of technical education in force in the Democratic Republic of the Congo, the state of play of technical secondary schools in the city of Likasi and the analysis and interpretation of results.

## 1.1 The School Program of Technical Education

According to Encarta (2009), the program is the set of subjects taught or what is studied in a school cycle. For this study we considered the program in its part of the practical subjects and we looked at the points below:

- 1) The state of the program
- 2) Objectives of the practical courses
- 3) Textbooks used in technical schools
- 4) The number of hours allocated to the workshops and laboratories per class and per week,
- 5) Teaching materials

## 1.2 Status of the program

The curricula in force in technical and vocational education are more than thirty years old, for example; the National Electricity Program (SAMAFOS Edition, 1982); and the new edited programs date from:

- 2006 for the electronic option (EDIDEPS, 2006)
- 2007 for general mechanics and automobile mechanics (EDIDEPS, 2007)

These programs are outdated and they do not correspond to the current realities of technological progress. The manuals that had been used in their development have already disappeared in the book market. Most of these manuals were published around the middle of the first half of the 20th century, but nowadays we have to deal with new machines and new books edited according to the norms that govern the new technology. In the absence of adequate documentation, many teachers use their old notebooks to prepare the lessons with all the consequences that may result. It should also be noted that the inaccessibility to the internet further contributes to widening the gap between; on the one hand teachers and pupils and on the other hand between them and the labor market.

We are witnessing the formation of charlatans who often become too dangerous for society. Can we believe a blind man who leads another blind man?

### 1.3 Objectives of the practical courses

Taking inspiration from the general objectives of the practical courses included in the national program in force, technical options in the DRC, we can identify the specific objectives that can be summarized as follows: The professional practice courses offered in the different technical options should to make the students, future technicians and middle managers able to adapt to the realities encountered in the professional life, that is to say in a specific way to endow to a learner a specialized know-how and to give him a whole of the processes implemented to achieve a specific.

With the evolution of technology, these objectives formulated more than thirty years ago are outdated and do not meet the expectations of the job market for which the finalists of today's technical schools are destined.

### 1.4 Textbooks used in technical schools

The concepts essential to the systematic learning of a discipline are found in textbooks. The skyrocketing of technology has revolutionized the educational system, that is, everything changes and everything has to adapt. To her. The textbooks used to prepare the lessons are out of date; not only are they obsolete; they can not be found on the market.

The emergence of the internet, too, has upset the world of research by flooding the canvas, with all kinds of books and information.

The danger is that teachers and students have no choice about the variety of books they download; we no longer know the manual which is didactic of the one who is not.

### 1.5 Number of hours of practical courses in workshops and laboratories (National Program, SAMAFOS edition, 1982)

The national program in force in the Democratic Republic of Congo sets the number of hours or periods of practical courses per week as indicated in the following tables:

**Table 1:** Number of hours per week of practical courses for the electricity option

	3rd Year	4th Year	5th Year	6th Year
Adjustment workshop	4	-	-	-
Electrical workshop	3	6	6	6
Electrical laboratory	-	3	3	2
Total	7	9	9	8

**Table 2:** Number of hours per week of practical courses for the General Mechanics option

	3rd Year	4th Year	5th Year	6th Year
Adjustment workshop	4	-	-	-
Machine tools workshop	-	4	4	-
Engine Workshop	-	-	-	4
Forging and welding	-	4	4	-
Total	4	8	8	4

**Table 3:** Number of hours per week of practical courses for the construction option

	3rd Year	4th Year	5th Year	6th Year
Practical work	9	6	4	-
Topography	-	2	2	2
Practical metric	-	-	-	4
Total	9	8	6	6

**Table 4:** Number of hours per week of practical courses for the electronic option

	3rd Year	4th Year	5th Year	6th Year
Electrical workshop	5	-	-	-
Electronic workshop	-	4	6	7
Electronic laboratory	-	4	4	3
Total	5	8	10	11

**Table 5:** Number of hours per week of practical courses for the automotive mechanics option

	3rd Year	4th Year	5th Year	6th Year
Adjustment workshop	4	-	-	-
Laboratory	4	8	8	9
Total	8	8	8	9

### 1.6 Teaching materials

Teaching materials are the specialized objects necessary for instruction, they make it possible to concretize a lesson and awaken the intuition of the learner. They are a source of inspiration for the teacher and the learner. To increase, according to the definitions.fr / material-didactic, one understands by didactic material any material bringing together the means and the resources which facilitate the teaching and the apprenticeship.

They are subdivided into two groups; concrete teaching aids and semiconscious didactic materials. The first category includes the machines, apparatuses, didactic panels, materials and various tools used to concretize the theoretical teaching; the second category includes images, diagrams, photographs of real objects that are not physically available, and videos.

Teaching materials evolve with technology and are specific to each lesson. They are a simple way of teaching to facilitate the understanding of the lesson. They therefore have a very important role in practical teaching because they eliminate verbiage during manipulation.

## 2. The State of the Places of the Likasi City Technical Schools

The city of Likasi is halfway between the city of Lubumbashi in the south and the city of Kolwezi in the west. It is a city, like other towns in southwest Katanga, where the mining industry occupies a prominent place in the province's economy; from where we attend the flowering of secondary schools.

We have; for this study categorized technical schools as below:

2.1 Technical schools equipped

These are schools that have the necessary infrastructure and equipment related to all the subjects of the national curriculum. These schools are non-existent in the city of Likasi.

2.2 Under-equipped technical schools

These are schools with inadequate infrastructure and equipment, and do not allow teachers of practical courses to sweep all the subjects of the program. In the city of Likasi, we have listed

Table 6: Under-equipped technical schools

No	School	Options organized						Laboratories				Workshops							
		Electricity	Electronics	Mechanics general	Automotive mechanics	Construction	Carpentry	Laboratory-electric	Laboratory- -electronic	Laboratory-construction	Laboratory-mechanics	Electrical workshop	Workshop-electronics	Workshop-machine-tools	Workshop-fitting	Workshop- boilerwork	Workshop-construction	Workshop-car	Workshop-joinery
1	I.T.I.SNCC	E	E	E	E	E	I	E	I	I	I	E	I	E	E	I	I	E	I
2	I.T.I. S <sup>1</sup> FRANÇOIS1	I	I	I	I	E	I	I	I	I	I	I	I	I	I	I	I	I	I
3	I.T.I. S <sup>1</sup> FRANÇOIS2	E	E	E	E	E	I	E	E	I	E	E	E	E	E	E	E	E	E
4	I.T.I. VYOMBO	E	E	E	E	E	E	E	E	I	I	E	I	E	E	E	E	E	E
5	I.T.I. USAWA	E	I	E	I	I	I	I	I	I	I	I	I	E	E	E	I	I	I

E = Existing I = Not existing

Source: Data collected in targeted schools

2.3 Technical schools not equipped

These schools have no infrastructure to provide quality practical education. For our study we have listed fifteen

technical schools of this category whose table No. 7 contains the necessary information.

Table 7: Technical schools not equipped with Likasi

N°	School	Organized options					Laboratories				Workshops						
		Electricity	Electronics	Méc générale	Méc-auto	Construction	Labo-élec	Labo-éq	Labo-cons	Labo-méc	Workshop élec	Workshop EQ	Atelier ajust	Atelier cons	Atelier MO	Workshop forge	
1	I.T.I. LIGHT OF CHRIST	E	-	E	-	-	-	I	I	I	I	I	I	I	I	I	I
2	I.T.I. Ufundi	E	-	E	-	-	-	I	I	I	I	I	I	I	I	I	I
3	COLLEGE OF ELITES II	E	E	E	E	E	-	I	I	I	I	I	I	I	I	I	I
4	KALUNGA INSTITUTE	E	-	E	-	-	-	I	I	I	I	I	I	I	I	I	I
5	KANU INSTITUTE	E	-	E	-	-	-	I	I	I	I	I	I	I	I	I	I
6	INSTITUTE LE ROCHERS	E	-	E	-	-	-	I	I	I	I	I	I	I	I	I	I
7	INSTITUTE MAFINGE	-	-	E	-	-	-	I	I	I	I	I	I	I	I	I	I
8	INSTITUTE MALAIKA	E	-	E	-	-	-	I	I	I	I	I	I	I	I	I	I
9	MASANGA INSTITUTE	E	-	E	-	-	-	I	I	I	I	I	I	I	I	I	I
10	MUMBA INSTITUTE	E	-	E	-	E	-	I	I	I	I	I	I	I	I	I	I
11	INSTITUTE MYAMBA I	E	-	E	-	-	-	I	I	I	I	I	I	I	I	I	I
12	INSTITUTE MYAMBA II	E	-	E	E	-	-	I	I	I	I	I	I	I	I	I	I
13	NYELE INSTITUTE	E	E	E	E	-	-	I	I	I	I	I	I	I	I	I	I
14	INSTITUTE SACRE-CŒUR	E	-	E	E	-	-	I	I	I	I	I	I	I	I	I	I
15	PROMISED LAND INSTITUTE	E	--	E	-	-	-	I	I	I	I	I	I	I	I	I	I

Source: Data collected in targeted

2.4 Virtual technical schools

Many other schools are fictitious; they operate in a virtual way by organizing only the terminal classes that are covered by other physical institutions recognized by the public administration. They have no infrastructure, no staff, but the head of the establishment has a traveling office and is in order with the public administration. He may be prefect at the same time of two institutes operating in the same buildings; one real and the other virtual; or can collaborate

with the one who owns premises and teachers for his business. These schools are designated by the students as "emergency schools"; because in these schools, above all, it is success, mass success is as a goal, to have the diploma of state first and the rest after, whatever the training received and the conditions under which the teachings are given . Virtual schools have a reputation for having a great capacity to organize all sections of the world, and are a great incubator for other private schools looking for clients. These are schools that are essentially based on profit and produce

another category of people we call "free students" among whom there are charlatans, house engineers, braggart, big names, etc. These proliferate at breakneck speed to such an

extent that they constitute a class of dangerous and harmful elements for the development of enterprises and society.

## 2.5 Infrastructures

**Table 8: Buildings**

No	Name of the school	Buildings for rent	. Own buildings	Respect for standards	Sports equipment
1	I.T.I. ELITES II	Oui	Non	Oui	Basket, foot
2	KALUNGA INSTITUTE	Yes	No	No	No
3	KANU INSTITUTE	Yes	No	No	No
4	I.T.I. LIGHT OF CHRIST	Yes	No	No	Basket, foot
5	INSTITUTE MAFINGE	Yes	No	No	No
6	INSTITUTE MALAIKA	No	No	No	No
7	MASANGA INSTITUTE	No	No	No	No
8	MUMBA INSTITUTE	No	X	No	No
9	INSTITUTE MYAMBA I	Yes	No	No	No
10	INSTITUTE MYAMBA II	Yes	No	No	No
11	NYELE INSTITUTE	Yes	Yes	No	No
12	I.T.I. SNCC	Yes	No	Yes	Basket, foot
13	INSTITUTE SACRE-CŒUR	Yes	No	No	No
14	I.T. ST FRANÇOIS I	Yes	No	Yes	No
15	I.T. ST FRANÇOIS II	Yes	No	Yes	No
16	PROMISED LAND INSTITUTE	No	Yes	No	No
17	I.T.P. Ufundi	Yes	No	No	No
18	INSTITUTE THE ROCK	No	Yes	No	No
19	I.T.I. VYOMBO	Yes	No	Yes	Soccer
20	I.T.I. USAWA	Yes	No	Yes	Basket, foot

Source: Data collected in targeted schools

### Comment:

Out of twenty schools listed we have:

- Thirteen schools have clean buildings; that is 65%;
- Five out of thirteen schools have buildings built to standards; that is 38.41%; it is I.T.I. SNCC, St Francis I and II, I.T.I. Vyombo and I.T.I. Usawa;
- Seven out of twenty schools are tenants; they rent out warehouses, sheds, houses where classes are organized in every room of the house: kitchen, bathroom, shop, laundry room, bedrooms, living room, dining room and garage. The warehouse and the hangar are partitioned at the height of 2.40 meters, which allows the violation of the rules of the communication;
- Due to a lack of space, some schools do not have a playground and pupils recreate themselves in the street, with the result that they are diverted and lack of control by the school authorities;
- Some schools operate in the promoters' plots.

## 3. Analysis and Interpretation of Data

According to the data available for our study, on the targeted technical secondary schools in the city of Likasi, the following analyzes and interpretations emerge:

### 3.1 From the technical secondary school curriculum

- 1) The content of the national program for the different technical options studied does not correspond to the realities on the ground encountered in schools, it is over-emphasized, it is outdated, the program is no longer adapted to the evolution of technology with the tendency to computerization of almost all systems.

- 2) The hours foreseen by the program for practical courses (see table 1 to 5):
  - They are not really provided in the schools not equipped for lack of adequate equipment. Some of these schools send their students to under-equipped schools for visits.
  - Particularly, those of the general mechanics, go in the garages of automobiles of the individuals where the visits made do not fit with the contents of the national program; which is an inappropriate hardware use.
  - Are partially provided in under-equipped schools as a result of insufficient and obsolete equipment;
  - The plethora of students decreases the number of hours of practice allocated to each learner during his
- 3) The lack of equipment or under-equipment of technical schools constitutes an anti-pedagogical value in relation to teaching materials.
- 4) The insufficiency and lack of material influences the training of learners;
- 5) The obsolescence of the equipment keeps the learners behind in the conquest of employment;
- 6) The absence of equipment or the use of inadequate equipment leads to the training of business and society assassins;
- 7) Access to textbooks related to the national curriculum is not easy because they are old books that have almost disappeared on the market; teachers use textbooks used in other countries that are not in keeping with the program in force in DR Congo. This is due to the lack of updating and adaptation of textbooks to the progress of science.
- 8) The objectives of the practical courses set in the national curriculum are not achieved, which renders the students, after their studies, unable to adapt in professional life.



Failure to achieve educational objectives is the cause of the shortcomings experienced by children, and we are witnessing an exaggerated growth of the disguised unemployed. One striking example is that we see a lot of idle and unemployed people in the city who have the technical humanities who became traders, salesmen of gasoline, commissionaires, etc. due to lack of initiative.

In view of the above, we find that the content of the national program of practical courses is either unfinished or unaddressed; therefore these schools form three categories of technicians:

- 1) Under-trained technicians (T.S.F) produced by under-equipped technical schools (E.T.S.E) are the lowest rate of technicians or 25%; they adapt easily, and in companies and higher and university studies;
- 2) Malformed technicians (T.M.F) produced by un-equipped technical schools (E.T.N.E), which have many theories and not practices;
- 3) Untrained technicians (T.N.F) from virtual technical schools (ETT.V), they have neither theory nor practice and they are characterized by vain arrogance.

### 3.2 From the state of play of technical schools

For a technical school to be able to train technicians who meet the needs of professional life and Congolese society, it must be sufficiently equipped in relation to the content of the national program in accordance with technological progress; Unfortunately, this is not the case for most technical schools in our country, especially those in the city of Likasi, which does not allow these schools to really fulfill their mission.

Visits we made to the targeted technical secondary schools for our study in Likasi, and exchanges with the managers or managers, the different points of view gathered from the students and alumni of these schools as well as some of the parents we met, suffice to prove the following:

- 1) The equipped technical secondary schools are non-existent in the city of Likasi, ie a rate of 0%;
- 2) For under-equipped technical secondary schools:
  - They represent five out of twenty of the schools targeted for our study; because several other schools exist only by name, ie a rate of 25%;
  - The obsolescence of the equipment does not allow the learners to approach the evolution of the technology, which requires the revision of the curricula of the technical courses in general and the practical courses in particular;
  - The inadequacy of the equipment does not allow teachers to sweep all the practical subjects foreseen in the program, thus having a negative impact on the number of actual hours that each learner has to do for his complete training;
  - The plethora of students is not suited to the capacity of existing workshops and laboratories, which prevents the program from being completed in the expected time.
- 3) For non-equipped schools; the fact is unfortunate. Include the following points:
  - These schools represent the majority of technical secondary schools; the proof is that of the twenty

technical secondary schools studied; they represent 15 out of 20 or 75%;

- The total lack of laboratories and workshops, which are appropriate frameworks for the training of a technician in practical terms; constitutes a crime;
- The use of inadequate equipment is a commonplace;
- The pupils bring the panels on which they make montages by spreading them on the ground.

## 4. General Conclusion and Suggestions

After observing what is going on in education for more than two decades, particularly in technical secondary education, the fact is that the majority of students graduating from these schools has many flaws in their professional life, or even in pursuit of their higher and university studies and it is related to the training received in secondary humanities.

Our investigations in this work revealed that these cases are more relevant to students who have completed their studies in unskilled technical secondary schools and virtual schools.

We also note that the maladjustment of the curriculum to the evolution of technology, the lack of appropriate teaching materials, the difficult access to textbooks and the INTERNET, the lack of monitoring of the application of the program constitute the main sources of the poor quality of A2 technicians launched on the job market.

Through these lines, we suggest that the government of the Democratic Republic of Congo, through its specialized bodies of technical secondary education, look into this situation. It is mainly:

- Curriculum revision;
- Revision of textbooks in accordance with the national program;
- The availability of textbooks and easy access to all actors and donors of education;
- Computerization the educational apparatus;
- The requirement for un-equipped technical schools to have the necessary equipment for full student training and for under-equipped schools to renew and complete the rest of the equipment;
- The eradication of the virtual education system,
- Instruction to inspectors to provide an accurate report to the hierarchy on the infrastructure and equipment for the granting of approval and authorization of a school by third parties;
- The requirement for secondary school technical promoters to have adequate infrastructure and equipment and standards, prior to school approval.

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