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Analyzing the Disruptive Effects of Irregular Power Supply on Student Academic Performance and Administrative Oversight in Technical Education

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Abstract: ***This study explores the impact of untimely power cuts on the pedagogical supervision and practical learning of students in technical schools in the Kikula commune, focusing on the general electricity option. Using a sample of 120 participants, including students and workshop teachers, the research reveals that frequent power outages hinder the effective implementation of practical sessions, thereby obstructing students' ability to acquire essential technical skills. Teachers face challenges in achieving curriculum objectives, while students struggle with motivation and comprehension of theoretical concepts. The findings highlight the need for reliable electricity in technical workshops and propose the development of alternate power sources and improved infrastructure. Recommendations include targeted measures for students, teachers, authorities, and scientists to ensure effective training and skill acquisition in technical education.***

Keywords: power cuts, technical education, practical learning, electricity workshops, Kikula schools

1. Introduction

Modern pedagogy requires the child to be active. An active child is one who observes, sees, discovers, shows, counts, smells, touches, listens, tastes, etc. To carry out all these activities, the child must be exposed to tools such as teaching materials and laboratory equipment that allow the student to reconcile theory with practice. To enable the teacher to lead the learner to combine theoretical knowledge with practical knowledge, certain prerequisites must be met. In particular: the availability of laboratory equipment and the gathering of elements facilitating its operation, the main one being the electrical current.

These requirements of modern pedagogy are not always met in the secondary schools with technical options in the mountainous city of Likasi where teachers do not know how to make learners do.

Thus, after observation and exchanges with the teachers, students and school authorities of some secondary schools in the commune of Kikula who organize the general electricity sector, we realized that untimely power cuts are more and more commonplace.

Modern pedagogy favors teaching based on concreteness, much more so for technical courses such as general electricity, hence it is essential to have electrical energy permanently in the workshop room. A teacher who does not use workshop equipment during his teaching will not be able to achieve his operational objective as he would have liked. As a result, students will be stuffed with abstract theories without having to deal with it. without having a real knowledge of the concepts acquired. It seems possible to remedy this problem by developing other sources of electrical energy and renewing the equipment of the S. N. EL (national electricity company).

2. Methodological Framework

The framework of this research is the technical schools of the commune of Kikula, organizing the electricity option. For the purposes of our study, the population consists of all secondary school students who have completed an apprenticeship course in the technical field in Kikula commune, of which we have taken as a sample. The people questioned were chosen on the basis of the following criterion:

- Be a learner enrolled in the electricity sector in a technical school in the commune of Kikula;
- Have completed a normal curriculum;
- Not having the problem with discipline;
- Be a teacher of Laboratory or Workshop courses in the electricity option.

Thus, the sample includes 120 individuals, as shown in Table 1.

Table 1: Description of the population in aid

Category	Number of Employees	Percentage
Students	60	50
Workshop Teachers	60	50

3. Data Presentation and Analysis

The presentation of the various data is done in a double - entry table as recommended by the standards in force in educational sciences. Each table will be accompanied by a commentary that will shed light on the figures it contains.

The data produced during our research are included in the table below, which specifies different themes and the related responses.

Table 1: Summary of results

No	Yes	No	% Yes	% No	% Total
1	100	20	83,3	16,6	99,9
2	3	117	2,5	97,5	100
3	0	120	0	100	100
4	5	115	4,1	95,8	99,9
5	30	60	50	50	100
23	168	432	28	72	100

At the end of the presentation, the analysis of the data and the verification of the hypotheses, it is easier to interpret the results by giving them an explanation. To do this, we present the overall results in the following lines.

The independent variable being relative to the untimely cuts of the electric current to which our fundamental hypothesis is attached, which is summarized in the fact the untimely cuts of the electric current, negatively influences the various practical sessions and does not allow the acquisition of know - how. This hypothesis is verified insofar as the conclusions of the themes relating to the latter remain true. The results prove that untimely power cuts completely prevent learners from benefiting from the know - how advocated by the competency - based approach. The figure below illustrates the frequency of practical sessions carried out during the month of October 2024.

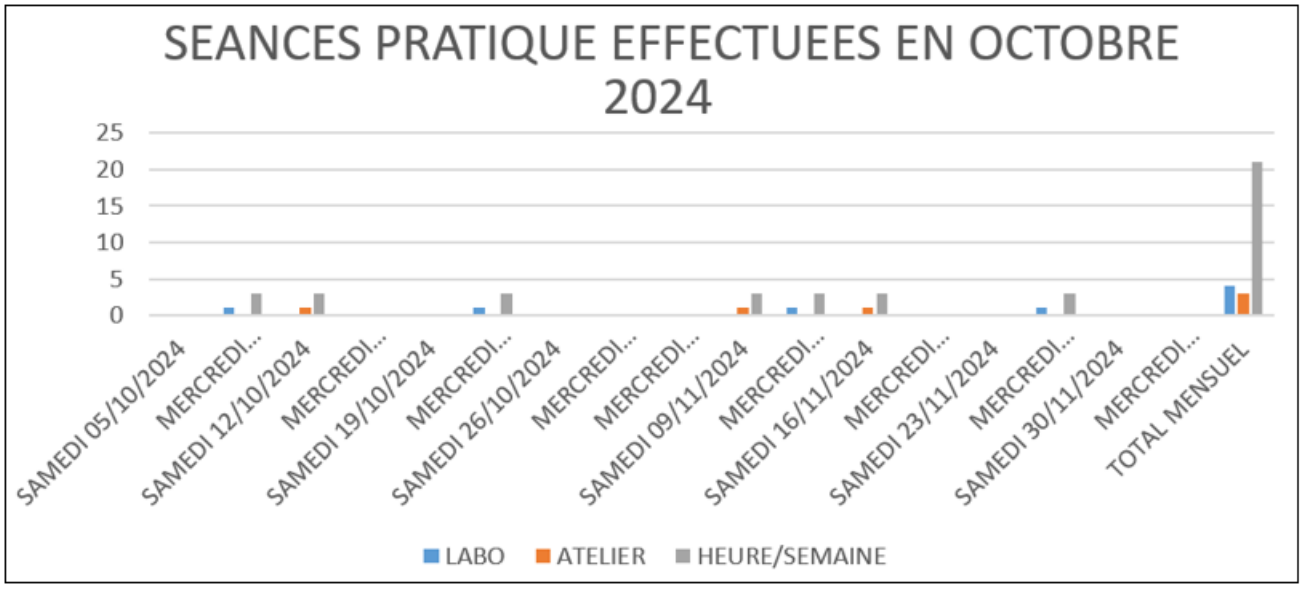

Figure 1: Practical session held during the month of October 2024 at the I. T. I/ VYOMBO

According to these conclusions, the communication of knowledge is a possible reality for active, continuous and non - discontinuous practice, i. e. that a learner evolving in a regular rhythm finds interest and motivation, which is supported by John Dewey's (1940) idea that "interest is the driving force behind acts". Thus, it turns out that motivation is an indispensable element in the learning process. It is also noted that the teacher does not have the possibility of achieving the objectives assigned to each practical session, let alone covering the entire subject plan. This situation leads to less attractive training, which makes learners inactive and biases the learning process by lack

Jean Jacques ROUSSEAU says that the child must be at the centre of his training (Pedocentrism). To do this, he must benefit from supervision at all levels in order to possess not only the knowledge but also the know - how.

Regarding the interpretation of the results of the dependent variable which relates to the learning and pedagogical supervision of learners in technical schools in the commune of Kikula, general electricity option which focuses on the operational hypotheses according to which:

- The proportionality of the number of practical sessions per month for a learner is a factor that influences the know - how of students in general electricity in the schools of Kikula commune.
- The number of continuous activity by learners influences their learning.

The operational assumptions are verified by the fact that the conclusions drawn after analysis and interpretation of the results have allowed us to note that the high number of power cuts during practical sessions negatively influence the acquisition of know - how by the learners of the various technical schools in the commune of Kikula. To better illustrate this, Figure 2 below retraces the sessions planned for the two months, i. e. October and November 2024 by a teacher from the Vyombo Industrial Technical Institute, taken by the Congolese State as a pilot school for the competency - based approach.

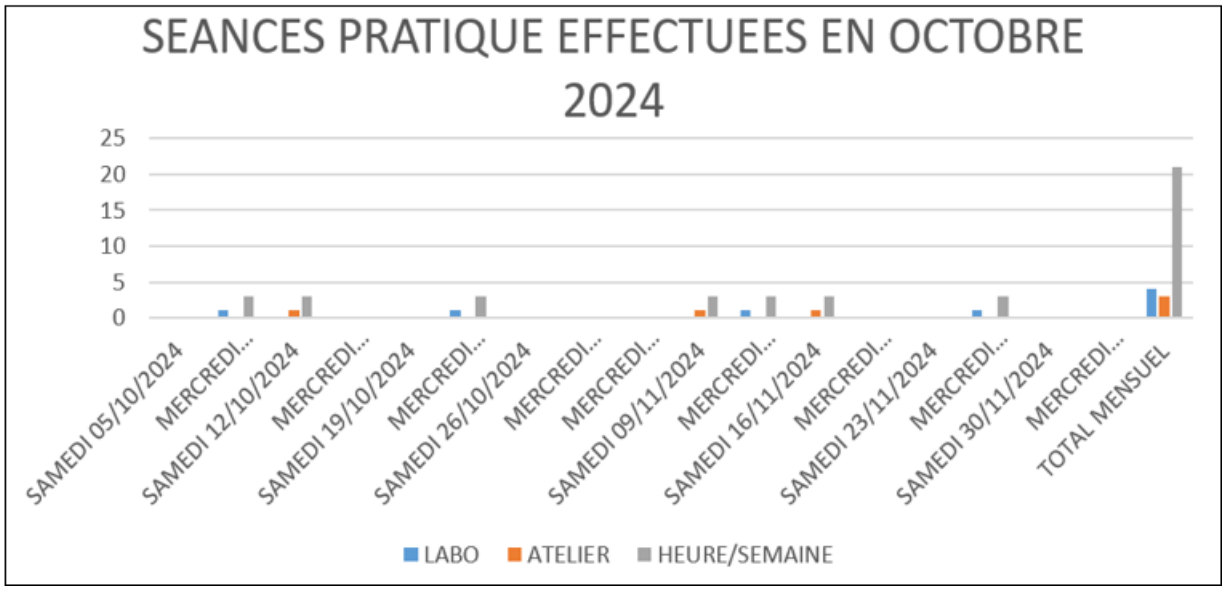

Figure 2: Evolution of practical sessions over two months

Figure 2 gives us more light to this. Indeed, according to the conclusions of this diagram, it is easy to see that it is not possible to bring the pupils to the assimilation of knowledge in an environment where repeated cuts in the electric current is the way of life, still less to make a didactic session interesting because the active methods do not adapt to the practical lessons in such a school.

In addition, it is not easy to objectively evaluate the lessons given for practical lessons because, in view of the evolution of the situation, some facilitators are outright opposed to giving six tenths instead of the real mark of each student.

For Michel Fragomichelakis (Ottawa 2010), any training in the technical field places particular emphasis on know- how. Indeed, know - how is the set of technical and practical skills that a trainee is able to mobilise in order to carry out functions relating to his or her field of training.

In view of the current situation, it appears that there is a mismatch between the trained person and the profile of the man defined by the legislator in the field of education, due, among other things, to the lack of know - how, i. e., the absence of practical knowledge. Indeed, the observation made is that power cuts occur regularly and school principals do not know how to schedule and respect practice hours because they do not know if they will have power or not.

Untimely power cuts have a negative impact on the two main actors in the education sector, i. e., the teacher and the student. Below We present some of the main negative effects of regular power cuts on the learning and pedagogical supervision of pupils in schools with technical options in general and those organising general electricity in particular. Here are some negative facts about the power cut on the direct actors of education.

1) For the teacher

For the teacher, untimely power cuts have several consequences, the main ones being the difficulty for the teacher not only to achieve the operational objectives formulated before his lessons but also the difficulty of respecting the subject plan and especially the national curriculum; Because the teacher will sometimes be forced to postpone the sessions each time there is a break. It should also be noted that the regular interruption of the power supply sometimes leads to a lack of motivation and real interest.

In addition, it is well known that it sometimes happens that the teacher continues certain work such as: the preparation of a lesson which must be prepared in all its details, this implies a reading of several textbooks, a judicious and precise choice of teaching materials, etc. Not only the lesson but also the composition of the questions, the calculation of points, the correction of exam papers, homework and exams which, with the evolution of technology, requires electrical energy because the teacher can have books on phones or on computers. He can even, if the school allows him, to calculate the students' points on the computer.

2) For the pupil

For the student, the regular interruption of the electrical power supply leads to a lack of motivation and real interest; Because an abstract theory does not only promote the proper learning of the profession but also the student's open - mindedness to the physical and real representation of the elements studied theoretically in the classroom.

In addition, everyone knows that when leaving school, the student must review the lessons and do homework given to him by the teacher. And it sometimes happens that he does them until late at night, but if he is in the dark because there is a break, he will not know how to do them and as a result, he will have bad grades (points), this will bias his training and expose him to failures.

4. Suggestion

In view of this research work focused on the impact of untimely power cuts on the learning and pedagogical supervision of students in technical schools in the municipality of Kikula, As a general electricity option, we cannot close it without making a few suggestions with the aim of improving the care of learners despite this reality in an

educational environment. Thus, our suggestions are addressed to students, teachers and authorities.

1) To pupils
   Students must be the artisans of their own knowledge. And this, not only by devoting themselves to the assignments given to them by the teacher but also by following his orientations, especially during practical work. For a good training, learners must also have a behavior free of any form of vice to allow the facilitator to do his job well in order to reduce the rate of failure, school dropout and the inadequacy of practical training.
2) Teachers
   To ensure better training of learners during practical sessions, teachers should try to extrapolate this situation by creating occasional practical sessions according to the availability of electrical energy to the network that serves it, while doing a special follow - up during walking classes. Visits are to be encouraged to get around this reality.
3) To scientists
   Through the results obtained on this research topic focused on the impact of untimely power cuts on the learning and pedagogical supervision of students in technical schools in Kikula commune, general electricity option, scientists must set up teaching programs adapted to the learners' study conditions in the practical field.
4) To the authorities
   Both local and national authorities must take decisions to improve teachers' working conditions and students' learning conditions. To do this, it is essential to build new support centers for existing schools to support them in the process of acquiring know - how for a better training of the Congolese elite.

In short, all actors in the education sector must do everything possible to apply these suggestions in order to ensure better training that highlights practical skills in order to facilitate the integration of the trainee into the world of work.

5. Conclusion

Through the lines above, this article is part of the idea of emitting knowledge focused on the presentation of the impact of untimely power cuts on the training of students in the general electricity option. Thus, in view of the observation made, we can say that our work has not been in vain insofar as we can safely say that untimely cuts have a negative influence on the supervision and pedagogical learning of students. In addition, we suggest that the country's authorities build centers for learning know - how, with a permanent source of electrical energy in each educational environment. These support centres will have to operate under the supervision of the teaching organisers in order to achieve the objectives assigned to the Electrical Laboratory and the Electrical Workshop. The proposal of the solution in the immediate future is also valid for for the promoters of private schools, who must make an effort to affiliate with the support centres in order to achieve the objectives, because it is said: "a picture is worth a thousand words".

References

[1] HOUSSAYE J., (1999) (under the coordination of), Questions pédagogiques, Encyclopédie historique
[2] Law No.14/011 of 17 June 2007, on the education sector
[3] ILUNGA BUMUTE Christian (2022): Educational planning, unpublished course, second Bachelor's degree, UNILI/Likasi
[4] BEAUD Michel, scientific research in French universities, Paris 1994