

Problem Situations in the Use of Information and Communication Technologies (ICT) in higher Education and University Establishments in Lubumbashi Working in the LMD Reform

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1. Introduction

The global university space is changing. This transformation concerns in particular the teaching programs that the Bologna reform enshrined with the establishment of the LMD with, as a corollary, the establishment of quality assurance mechanisms. In order not to leave the process, the Ministry of Higher and University Education in the Democratic Republic of Congo to integrate the LMD device in accordance with the Bologna model (Ministerial Circular Note No.25 of September 2, 2010). According to academic instruction N°014/MINESURE/CABMIN/2012 of August 15, 2012 "the attachment of Higher Education and the University of the DRC to the Bologna Process is inevitable due to globalization (Tshinyama, 2017, 1).

Since the Bologna process launched in Europe in 1999 to standardize university degrees on the American model of the Bachelor-Master-Ph D-Doctorate (LMD), African universities in the French-speaking area, including higher education and university establishments in The Democratic Republic of Congo and more particularly those of Lubumbashi, have initiated a series of reforms (LMD: License, Master, Doctorate) structured in 3 levels or three cycles of studies leading to the degrees of License, Master and PhD, which constitute respectively the corresponding diplomas. According to the follow-up report on the implementation of the sectoral strategy for education (SSF) and training, this reform must thus respond to the concerns of Congolese Higher Education and University (ESU) in particular: the improvement of offers of higher and university education throughout life, the harmonization of study programs on the national territory and within African spaces (CAMES, SADC, etc.) and international (European Space, Anglo-Saxon Space, Northern Space American, etc.), the promotion of innovative pedagogical and administrative approaches, the professional integration of students by opening up higher education and university establishments to the professional world, the empowerment of learners in their various training paths, the flexibility in the training path for the student and compliance with international standards in higher and university education in order to promote the mobility of teaching staff and students. Desbiens (2004) points out that, in recent years, the world of communications and access to information has undergone a

major revolution. The computer and other information and communication technologies are called upon to play an increasingly important part in the performance of personal and professional activities. For its part, the reform school cannot escape the influence of ICT. Higher Education Institutions are therefore called upon to align themselves with the global movement characterized by the intensive use of Information and Communication Technologies, a source of multiple digital technologies which will lead to transformations in many sectors with the effect the elimination of several routine jobs destined to be automated and making essential the acquisition of new skills and their improvement. Those transformations require a range of skills ranging from skills basic digital skills and from user literacy to skills advanced digital.

Considering the current context of globalization, he noted that the LMD system has both structural and organizational requirements (Boukary2011, p.21). The opportunities thus offered by ICT to improve the quality of teaching-learning and increase the educational offer are now accepted by many researchers and institutions. So, the integration of these technologies in education has become an almost absolute necessity, especially for countries in sub-Saharan Africa. Consequently, ICT is a key issue in teaching higher in the DRC and are becoming increasingly important. For Jimmy Rosario (2005), "The use of ICT in education can successfully attract the interest of students and teachers for scientific research, and the improvement of creative abilities, imagination, can be allowed. Communicative and collaborative capacities to access more information and provide the means for a better integral development of individuals. He also continues that "the use of ICT in education is becoming a reality that forces education systems to take a stand against it".

The new information and communication technologies (NTIC) offer new educational tools with wide fields of application and thus become an important player in the educational environment and offer teachers the possibility of supervising students online, organize collaborative work, interactive exercises or group workspace, introduce discussion forums and face-to-face meetings, offer self-assessments, organize end-of-cycle and remote memorization work. Etc.

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In the Monitoring Report of the implementation of the ¹SSEF 2016-2025 (2019: 82), it is pointed out that, the implementation of the LMD reform relies heavily on the use of information technologies and (ICT) that can improve the quality of teaching, learning, research and university governance. They facilitate, for example, the management of teaching units in accordance with LMD requirements, access to virtual libraries, Scientific analyzes with disciplinary software, etc.

However, in several higher education and university establishments, we have noted several cases of students and teachers complaining about the use of ICT which is still limited or even almost absent (lack of computer room, power failure, etc.) when the said reform has already begun. We were amazed by these problem situations and it seemed appropriate to make them an object of study in criminology because the link to the LMD system generates problematic practices which constitute an unacceptable situation for many students. As Pires, A (1997: 79) points out, "the notion of problem situation designates the fact that for at least one actor, a given situation is perceived as creating a problem or as being negative, unacceptable, undesirable".

This study therefore aims to understand the problem situations in the use of ICT in higher education and university establishments in Lubumbashi. We first present the object of research, the research question, the inclusion of this study in the object of criminology as well as the theoretical perspectives mobilized. Then we present the methodology used to collect the data. We also discuss related analysis strategies. Finally, we present the main results of the study followed by a conclusion.

2. Object and Research Question

The object of research can be conceived as what the question raised concerns. Thus, our project is based on the speeches of the students on the problem situations in the use of ICT in the institutions of higher education and university of Lubumbashi working in an LMD reform.

All research begins with a research question. This determines what the researcher specifically wants to understand by doing his study. According to Van Campenoudt and Quivy (2006: 13), this initial question must be clear, feasible and relevant. Lupitshi wa Numbi (2013: 87) continues that: "once the object of study has been defined and the field of the object of study has been circumscribed, it is important that a pertinent research question be put together to cement the basis of the study carried out".

Our research question is as follows: what are the problem situations relating to the use of ICT in higher education and university institutions in Lubumbashi evolving in the LMD reform? By this question, our study highlights the points of view or the perspectives of the students on the problem situations in the use of ICT in the LMD reform.

We subscribe to a descriptive register while considering that these are the problematic situations and interactions of which we want to identify, analyze and understand the meaning that the actors give to them. Thus, the present study is the result of an observation and exploratory interviews conducted on the daily discourses of students and teachers

Registration of the study in the object of criminology

According to Pires (1995: 25), "criminology is a complex activity of interdisciplinary knowledge, both scientific and ethical in nature, aimed at the elucidation and understanding of the criminal question in the broad sense (i. e. problem situations and social control". it should be noted that throughout its evolution, criminology has problematized the criminal question in two paradigms: that of acting out and that of social reaction. The perspective of acting out takes up all the causalist theories which seek the individual or social reasons for delinquency, but also the rationalist theories which put at the center the delinquent and his strategies for playing with social control. The social reaction paradigm perceives crime and criminality as the fruit of a construction of a legal and political nature. Note that, for Cusson (1192: 19), the criminal phenomenon is shaped by the decisions and actions of offender ants, victims and agents of social control.

The object of our research consists in analyzing the speeches of the students on the use of the TIC vis-a-vis the application of the reform LMD in order to include/understand how do they apprehend them. Thus, the present object of study is part of the paradigm of the study of social reaction in the sense that it is the speeches of the students which define or construct the problem-situations which occur in the application of the reform. LMD more particularly with regard to the use of ICT. Therefore, we do not start from the idea according to which there are problem-situations in themselves, but starting from the discourses constructed by the students themselves on what they perceive, apprehend or represent themselves as being situations. Problems in the use of ICT in the face of the LMD reform in higher and university education establishments in Lubumbashi.

3. Literature Review

It is necessary to read the works already carried out on the object of research that one wants to treat, this allows the researcher to fix on what has already been said on the object in question. Question, draw inspiration from it and make a demarcation. However, the ambition here is not to draw up a whole state of the question, but to question previous research in relation to the research theme on information and communication technologies.

Of the studies that have been interested in ICT, we retain the following:

Perrenoud (1998) points out that, however, the potential advantages of ICT can only materialize to the extent that university trainers are aware of their importance and their specific contribution to teacher training. The author adds that trainers should not reserve for ICT the place of optional activities, but that they must adopt an attitude of "cultural, sociological, pedagogical and didactic monitoring, to understand what the school, its audiences and its programs

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will be made tomorrow". In his study, Pelgrum (2001), continues that the obstacles to the pedagogical integration of ICT are very complex and any obstacle is likely to be caused by a wide range of interrelated factors. The author shows that comparisons between general approaches to ICT in different countries, or even in individual schools, do not necessarily provide easy solutions for reducing these barriers. Hence the need to conduct more in-depth research on the barriers to the pedagogical integration of ICT, starting with the factors that allow their more generalized use in order to find lasting solutions. As for Kozma (2003), he concludes that, with ICT, teachers go beyond basic practices and use technology to plan, prepare for teaching, collaborate with external actors and, when students use technology to carry out research projects, analyze problems, produce and evaluate their own work, these students are more likely to develop new skills in communication, problem solving, information management and collaboration. BECTA (2004), noticed that the level of teachers' commitment to ICT and their level of confidence in the use of technology constitute a determining factor for integrating ICT into teaching practices. Indeed, teachers who have little or no confidence in using computers in their work will try to avoid using ICT altogether. To overcome the barriers to ICT integration, BECTA even recommended that school leaders develop, implement precise and clear technological plans on ICT integration, that these leaders become role models in terms of ICTs and finally that they establish the necessary confidence among the staff for the ICT integration process.

4. Definitions of some concepts

4.1. The LMD reform and its international and African context

According to Rocare (2011, 9), the LMD is the acronym for License Master Doctorat. By LMD reform, we mean all the changes or innovations introduced in higher education which consist of a reorganization of the training system into three levels: Bachelor, Master and PhD. It is an organization of university courses, inspired by that in force in the Anglo-Saxon countries (United States, Canada, Great Britain, Australia, . . .), widespread in the countries of the European area through the process known as the "Bologna Process" and is developing in many other countries around the world.

The LMD system is becoming an international system for harmonizing courses and diplomas, promoting international mobility. These are the three university degrees, Bachelor, Master, Doctorate, sanctioning the three training cycles offered by this system modeled on the Anglo-Saxon Bachelor, Master and PhD. Its adoption in Europe and in the French-speaking countries of Africa is part of the logic of Americanization of knowledge that the world is witnessing more and more. The LMD system results from the European harmonization of higher education through the "Bologna Process".

The LMD system was set up in Europe from the Bologna process in 1999. It is a structuring of higher education modeled on the Anglo-Saxon model Bachelor, Master, Doctorate in which the organization of training is done in semesters and transferable and capitalizable teaching units.

Each teaching unit is allocated a number of credits corresponding to the volume of work to be provided by the student: courses, personal work, etc. It is also called 3-5-8 system, because from the baccalaureate, it takes three years to obtain the License, five years for the Master and eight years for the Doctorate. Implemented in French-speaking African countries in recent years, from a meeting of WAEMU countries in 2007 in Dakar, the system pursues an objective of formalizing the method of certification to European standards and improving the quality of training. This is one of the solutions to the many problems facing the university system in Africa. While the challenges of higher education are largely covered, the precise aspects of the LMD system in their national contexts seem to be much less so. We must go beyond generality and see how the system adapts to each specific context where it is called upon to be implemented. Also, most of the works that we come across are very descriptive. However, today, there is an interest in going beyond a simple explanation because the LMD reform is already making its way and constraints seem to affect its proper implementation. (ERNWACA, 2011: 11).

Provided for in article 98 of the national education framework law, the adoption of the LMD system within higher and university education is a reform that establishes the organization of studies at the level of higher education and university in three cycles: "Bachelor-Masters-Doctorate". This system is aligned with the Bologna process and offers the possibility of creating bridges between continents, countries, institutions, for globally recognized certifications.

4.2. The concept of ICT

The term ICT refers to information and communication technologies. Beyond this laconic explanation, we must see "the advent of a new mode of communication. It includes digital television, fiber optic telephone, satellites, etc. The most spectacular illustration of this revolution is undoubtedly the Internet" (Mbangwana and Ondoua, 2006, 82). In other words, ICT designates "a set of technologies which generally include the computer and which, when connected or interconnected, are characterized by their ability to store, process, make accessible (on a screen or other medium) and transmit, in principle everywhere, an almost unlimited and very diversified quantity of data. In addition, ICTs are increasingly present in various forms: text, diagrams, graphics, animated images, sounds, etc. (Grégoire, Bracewell and Laferrière, 1996, 2). Similar to the research of Raby (2004, 2005), in this research, the concept of "Information and Communication Technology" (ICT) will refer to digital technology equipment that can be used for teaching.

5. Theoretical perspectives

Quivy and Van Campenhout (2006, 85) underline "that opting for a theory therefore amounts to saying by what the object is going to be explained, that is to say to determine to what, to what type of element the phenomenon studied will be bound to make it intelligible". In the same angle of ideas, Lupitshi (2013, 95, 96) adds that the same object of study can give rise to several theoretical apprehensions. It is the

researcher who has the imperative responsibility of specifying, of justifying the theoretical presupposition that he intends to privilege in the approach and the reading of the facts. The grid of the social actor, of symbolic interactionism, made the phenomenon intelligible.

5.1. The social actor

According to Debuyst (1990, 25, 26), the social actor is a non-passive and non-determined subject, a subject who is not either an abstraction but bearer of a point of view that he claims. Digneffe (1990, 360) summarizes the behavior of the social actor in these terms: "the actor most of the time pursues objectives that are unclear, ambiguous, even contradictory (...). Its behavior is however active; even passivity is in a way a choice. The behavior of the actor always has a meaning to be discovered. It is rational in relation to opportunities and in relation to the behavior of actors. It is a behavior that always has two aspects. An offensive aspect in seizing opportunities to improve one's situation and a defensive aspect that empties in maintaining and expanding one's capacity for action. The use of the social actor in this study is justified insofar as it allows us to grasp the meaning that the actors give to the phenomenon that is the subject of our study.

5.2. Symbolic interactionism

According to Le Breton (2004, 46, 47), the individual is an actor interacting with social elements and not a passive agent bearing the full brunt of social structures because of his habitus or the strength of the system or his culture. Membership. He constructs his universe of meaning not from psychological attributes or external imposition, but through a deliberate activity of giving meaning. The aim of symbolic interactionism is therefore "to elucidate the meanings that the actors themselves implement to construct their social world" (Coulon, 1996, 108). From this point of view, the challenge of our research will be to understand the meaning that students give to the sanitary conditions of their facilities. According to Jadelet (2003, 61), the social representation is with its object in a relation of symbolization, it takes the place, and of interpretation, it gives it meanings. These meanings result from an activity that makes the representation a construction and an expression of the subject. In the species, the representation functions as a system of interpretation of reality that governs the relationships of individuals to their physical and social environment (Abric, J. C., 2011, 17). In conclusion, thinks Coulon (1996b, 108), the actor becomes capable of reflexivity on his own behaviors or practices and he can act on those of the others with whom he is involved in the relational game, as much as he can be. Influenced by them. Symbolic interactionism therefore aims to elucidate the meanings that the actors themselves implement to construct their social world.

6. Methodological Devices

The type of study that gave rise to this article is exploratory. We are engaged in an inductive approach by favoring the data collected on the field, which we then interpreted and analyzed. According to Muchielli (1996, 58), the inductive

approach aims to understand phenomena from the data rather than the collection of data to evaluate a preconceived theoretical model or a priori hypotheses "The study is part of a qualitative approach defined as being "a type of research that favors non-numerical data collected in the natural environment of people. The researcher tries to establish an interaction with the participants in the study in order to generate a rich and credible understanding. This inductive approach will be associated with a qualitative approach, because we would like to elucidate the meaning that the actors (students) give to their discourse on problem situations in the use of ICT in the face of the LMD reform.

Alani et al. (2009: 25) explain that the qualitative approach is part of an inductive approach, "that is to say, it seeks to explore reality, without strong starting hypotheses, with only one survey theme, but without presupposing the results".

In addition, we opt for a constructivist posture, because the objective of our research is to build a knowledge of the social. This posture will allow us through interactions between researcher and individual, points of view and experiences of the actors, to understand the individual constructions of reality in relation to our study, which will be interpreted and compared to succeed in building a new "reality" more informed than the previous constructions in connection with our questioning on the perceptions of the students the problem situations in the use of the TIC vis-a-vis the LMD reform.

6.1 Sample build

Sampling is the operation which consists in taking a certain number of elements (sample) from all the elements to be observed or treated (population) (D Hainaut, 1975: 32). According to Kantenga Mwamba (2015: 29), the sample is a subset of a population that allows us to have a life together. He adds by saying that "it is a process in which we choose in which places and from whom we will seek the data". Based on this categorization of samples offered by Pirès (1997: 20), our subject of study requires sampling by multiple cases.

Our study targets students from different institutions of higher education and university in Lubumbashi who have adopted the LMD system. We worked on a population containing fifty interviewees or resource persons. As a result, diversification takes place between the group of student actors from the University of Lubumbashi and the group of student actors from the Lubumbashi higher education institutes, in particular, the higher institute of applied techniques of Lubumbashi (ISTA-Ishi,) the higher institute of social studies (ISES), the higher institute of commerce (ISC).

6.2 Data collection techniques

Each research having its own realities, each research can condition the choice of the other data collection technique. It is in this sense that Ruquoy (1995: 60) emphasizes that the data collection method must be adapted to the type of data sought. To collect the data we will use semi-structured

interviews, conversational interviews and the documentary technique.

a) Choice and relevance of semi-structured interviews

It should be noted in this regard that the research interviews gradually make the researcher capable of observing and understanding the logics, the languages and the complexity of the condition of the interlocutors (Jamouille, 2002: 27).

The semi-structured interview is defined by Raymond (2010: 340) as "a verbal interaction animated in a flexible way by the researcher in the form of a conversation, the researcher is guided by the rhythm of the interview and addresses the themes that 'he wishes to explore with the participant'. Thus, the semi-directive interviews will allow us to collect the speeches of different actors on the object of study, to grasp the representations of the people interviewed, their vision of the world from the speeches produced, which speeches are submitted to the analysis to find the answer to our research question. The use of the interview will make it possible to exteriorize what is intimately interiorized in the actors.

b) Choice and relevance of conversational interviews

Conversational interviews will also be of great importance to us in the collection of data for our research because the formal interview (appointments, times and places) will not always be possible for a category of actors who can be very reluctant or reserved. This technique will be an alternative to the refusal of interviews or the fear of such a risk. Therefore, the choice of interviews is important insofar as it will allow an understanding of the elements provided by the data resulting from the observation by making the actors concerned speak.

c) Choice and relevance of the documentary technique in this study

Documentary analysis can be of some use, particularly in the possible verification of data collected not only by the interview technique (Nkulu Ngoy, 2015: 82). As a result, as part of our research, the data from the semi-directive interview will be supplemented by the documents that contain the state public administrations related to our object of study. The objective pursued by the exploitation of the documentation will be to resemble, for example, the data on the LMD reform and ICT. Thus, we will use any document likely to shed relevant light on our research object.

6.3 Data analysis technique

The data was analyzed using the hermeneutic method. Data analysis occupies a prominent place in all qualitative research (Deslauriers and Kérisit, 1997, 98, 99). Thus, "if a researcher conducts interviews, it is not for the sole pleasure of the conversation, he does so to extract knowledge from their analysis. To analyze is to grasp the internal consistency of each interview. (Schaut, 2014, 108). From this perspective, as Albarello (2007, 174) points out, the quality of the analytical work depends on the creative capacity of the researcher, his strength of interpretation and his strength of writing. The content analysis does not have these as its object but rather what they contain". In other words, discourse is a signifier that carries a signified (Mwenzé,

2009, 104). "Collective hermeneutics is a method of collective interpretation of texts, particularly socio-biographical narratives, which aims to bring out the latent meaning contained in the speech of an individual and, thereby, to go back to his representations, his structures of consciousness" (Molitor, 1990, 19). "This method therefore postulates that the texts on which we work contain a manifest, clear, directly graspable meaning, and a latent meaning (Kantenga, 2014, 92).

7. Problem situations in the use of ICTs faced with the application of the LMD system in higher and university education establishments in Lubumbashi.

All of our interviews show different assessments. Several point to situations such as the insufficiency of ICT equipment, the absence of computer rooms, or even the insufficiency of computers in relation to the number of students, the low reception capacity of the infrastructures, the lack of digital libraries, the absence of an internet connection on campus available to students or a very low speed internet connection, computer courses or computer courses organized in certain institutions which have no laboratory with computers, breakdowns electricity or lack of electrical energy. Thus, we note that the assessments for the most part show dissatisfaction with the level of mobilization of the means required. As for the laboratory, many think that others are needed and mention the dilapidated state of the existing one. The students declare "that they do not have access to ICT in relation to the requirements of the LMD reform" The results obtained are likely to give a negative answer. Most students seem to be of the opinion that we are in a period of experimentation or generalization, the LMD reform requires a minimum of means which for the moment are not in place. However, in the Monitoring Report of the implementation of the SSEF 2016-2025 (2019: 82), it is pointed out that, the implementation of the LMD reform relies heavily on the use of information technologies. Information and communication technologies (ICT) that can improve the quality of teaching, learning, research and university governance. According to ERNWACA (2012), the LMD system has both structural and organizational requirements. Consequently, Information and Communication Technologies (ICT) are an unavoidable challenge for higher and university education and are becoming increasingly important. Ouédraogo (2011), affirms that "information and communication technologies (ICT) offer new teaching tools with wide fields of application and become an important player in the educational environment and offer teachers the possibility to supervise online students, to organize collaborative work, interactive exercises or a group workspace, set up discussion forums and face-to-face meetings. Based on the literature review and individual and group interviews, the study shows that higher education and university establishments in Lubumbashi were not sufficiently prepared before entering the LMD reform. This unpreparedness manifests itself, on the technological level, in the major challenges currently facing the application of the system. The students declare "that they do not have access to ICT to complete their training in relation to the requirements of the LMD reform".

8. Discussions

The application of the LMD reform has material and infrastructural requirements. As a result, higher education and university institutions in Lubumbashi should be sufficiently prepared before adopting this system. For our part, we are proposing to the authorities for the success of the LMD: the construction of laboratories and computer rooms, the establishment of digital libraries, autonomy in electrical energy, a high-speed and reliable internet connection, the establishment networking within the structures, taking into account the living and working conditions of the students and even the training of the teachers.

9. Conclusion

This work aimed to present the problem situations relating to the use of ICT in higher education and university establishments evolving in a LMD reform. The combination of the social actor grid and the perspective of symbolic interactionism made the phenomenon intelligible. The inductive approach, part of a qualitative approach, allowed us to go to the actors concerned and to elucidate the meaning that the actors have around the use of ICT. In addition, the hermeneutic method was used to analyze the data and show that the use of ICT is insufficient and still very limited. Thus, it almost appears as an initiative to be taken up again, especially within the framework of the LMD reform for which several universities and higher education establishments in the DRC have opted. The improvement of ICT is strongly recommended considering that it can advance the establishment of the LMD system, it is therefore imperative to quickly resolve this problem so that the challenge of the LMD is held in Congolese higher and university education and more particularly in Lubumbashi.

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