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Information and communication technologies in inclusive education for Côte d'Ivoire: case of physical handicapped students of Felix Houphouet Boigny University of Cocody

Koutou N'Guessan Claude
Université Félix Houphouët Boigny, UFR UFR des Sciences de l'Homme et de la Société, Institut d'Ethno-Sociologie, Département de Sociologie, 22 BP 535 Abidjan 22, Côte d'Ivoire
nkoutou1@yahoo.fr

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Abstract

The study "ICT and Inclusive Education" highlights the contribution of inclusive education and ICTs in the process of integrating students specifically the physically disabled in Côte d'Ivoire. Indeed, for decades, the disabled are subject to blatant exclusion in the educational world. They make up a third of the world's unschooled population. In Côte d'Ivoire, several policies have been put in place to allow everyone to have the same opportunities to learn, to train and integrate but alas these policies are still insufficient. This study assesses the integration policy of people with physical disabilities. A survey conducted on the basis of data from the Grouping for the Integration of Physically Handicapped Students of Côte d'Ivoire, allowed the sampling of 54 students. The type of sample produced is reasoned sampling. The results show that 53% of girls and 60% of boys with disabilities are satisfied with schooling benefits. However, the vast majority of respondents are not satisfied with the conditions of teaching and tutorials. 90.47 and 86.20% respectively are obtained for the first and second cycles. At the level of library services, 50% remain unhappy, while 22.22% say they are satisfied and 27.78% find the service acceptable. This research work contributes to a better understanding of ICT-based inclusive education and its impact in the academic life of the physically disabled.

Keywords: Inclusive education, physically disabled, ICT, vulnerable.

Introduction

Inclusive education is an educational approach that takes into account the marginalization and vulnerability situation and ensure equal rights and opportunities for all in education. It is an element that enriches the lives of learners and therefore promotes human development. Inclusive education is one way to achieve the goals of education for all, to ban discrimination, promote social cohesion and develop the full potential of each individual[1-4]. It is therefore aware of this reality that the Ivorian authorities have allowed all the baccalaureate holders, irrespective of their physical, psychological, moral and intellectual capacities, to pursue their studies in the various national universities. For a long time, these universities have received baccalaureates with special needs (physically handicapped, deaf, dumb, etc.) whose care and integration into the university dynamics often causes problem. Currently, on more than 50,000 students registered at Félix Houphouët-Boigny University of Cocody, there are a little more than 800 which present special needs: 85% are handicapped people; 10% are blind and 5% are deaf and/or dumb. In front of the specificities which they present, measures have been taken by the person in charge of the university to facilitate their integration. It is about the registration in the wanted sector, exemption or reduction of registration fees; the implementation of emergency procure for the administrative formalities; housing on the university site; the granting of scholarships, etc[5,6].

Despite these encouraging measures, handicapped students always have difficulty to adapt itself to the academic environment. For example, difficulties in enrolling in school because of the number of students who appears the same moment and especially because of the lack of box office specially booked for the handicapped students; Difficulties of access to amphitheaters considering the number of students and insufficiency of place (500 places for 800 or 1000 students); Unable to access certain libraries located on the first or second floor, etc. This situation is such as we have the impression that handicapped students are automatically excluded from universities since infrastructure in general and computer equipment in particular seem not to take into account their state of incapacity. And this, at a time when information and communication technologies (ICT), by the potential advantages that they present, stand out as a determining factor in the education and training of students[7-9]. So the problem for the present study is titled as, A study of strengths and limits of the policy of handicapped students integration at Félix Houphouët-Boigny University of Cocody through ICTs and inclusive education. Furthermore, the following objectives are set in the

present study, namely, the role of ICTs in Félix Houphouët Boigny University of Cocody for inclusive education; The actions to be envisaged to make ICTs the federative element of an inclusive education and the challenges to be overcome so that the university system is more flexible by taking into account all the diversities from ICTs can be enumerated in this study.

Literature: Problem of the coverage of the handicapped person worries more and more the decision-makers at the international level so that the organization of United Nation decreed year 1991 "international year of the people handicapped″. The objectives of this declaration are to equalize opportunities for health, education, vocational training, employment and access to all services offered to all members of the national community.

Considering vulnerability of these people, inclusive education appears as an alternative which can allow to reach this goal because many individuals are excluded from society for a variety of reasons. According to Jouval[10], more than 650 million people in the world live with a disability that sometimes prohibits them from participating in society. Often these people have a slim hope of being educated, having a job, their own home, a fulfilling social life and even voting. In addition, shops, public facilities and means of transport are difficult to reach.

Children with handicapped must fight a flagrant exclusion from education. Approximately one-third of the world's 75 million out-of-school and primary-age children are handicapped. Consequently, these children constitute the most disadvantaged minority on the planet. It is estimated that 20% of the world's poorest people are handicapped. At the level of the undeveloped countries, more than 90% of children with handicapped don't go to school. In addition, 30% of street children live in the world with a handicapped. For adults with handicapped, the literacy rate is only 3%. In some countries, this rate does not exceed 1% for women. Similarly, UNESCO underline that the exclusion has multiple face. Significant progress has been made in improving primary education, however, many children are still out of school, most of whom are in sub-Saharan Africa or South and West Asia[5]. Children living in rural and remote areas as well as those living in precarious urban areas have less access to education. However, the biggest exclusion is that of children with handicapped. Nearly 37% of out-of-school children live in 35 countries classified as frail by the OECD, to which are added several countries in conflict or post-conflict situations. Children in these countries are particularly vulnerable to school exclusion[6-10].

In this situation, efforts to promote schooling must be followed by a policy of improving the quality of education at all levels. Efforts must be made to create a continuum of success by linking the schooling policies of excluded children to the education that ensures their success. Thus, this requires taking into account the diversity of learners' needs. It involves interventions both in education and in school curricula. But also, at the level of interactional modes and relations between schools and communities. The school plays a big part in the success of inclusive education. Indeed, bringing together "healthy" people and "special needs" people in one place is already a means of fighting exclusion. This is why Imed[11], quoting the president of the association of cerebral motor cerebral parents, says that the education of people with disabilities or living with a disability will no longer take place in catchment centers In charge but rather in schools, in perfect harmony with able-bodied people. Indeed, it is in the school that the friendships are formed and it is only there that the person in situation of handicap could flourish. It is there that the people concerned can forget just as times her state of vulgarity with the support of his comrades. All children have the right to learn together. Thus, these handicapped persons should not be disadvantaged or discriminated against by becoming excluded or dismissed because of their condition or difficulty. In this project, we are talking about law. There are no justifiable reasons for separating children for their education.

The children go together with advantages and profits for all. They do not need to be protected from each other. Today, the objective remains to improve education opportunities for handicap situation of children and those who have difficulty of learning to develop their autonomy and their independence, in participation to achieve an education accessible to all categories of people. Indeed, the education of handicapped children is not a luxury but a human fundamental right that must be clearly asserted. A truly inclusive system should ensure equal education and support for all children in all schools and in all learning environments. For this to happen, a major restructuring and reorganization of education systems is needed.

Information and communication technologies (ICTs) play an important role in the education of children or young people in exclusion situations. Indeed, the European Agency for the Development of Education for Special Needs reported that the use of ICT in handicapped people's education in Europe reveals that teachers and be involved in the development of policy structure and resource in this area[12-14]. In addition, teachers and other educators should participate in the process of developing the technologies that have an influence in their work with students with special needs. However, numerous obstacles exist to implement including education. Even in developed countries, the mobilization of resources is not always easy. Indeed, a study on the financing of the specific education and the inclusion of children reveal that this factor is determining in the integration. Furthermore, if funds are not to mobilize on-line with an explicit politics at this level, the integration has on much luck to be realized on the ground. This situation is not specific in the west because in the poor countries, the problem appears with much more acuteness. African governments are often confronted with problems similar to those that meet the government of the North at the time of applying on a local scale educational programs learning on ICT[15,16]. However, it is fundamental to overcome all these difficulties and to make school a place where all children are treated fairly. Therefore, a profound change in the education system is essential.

Inclusive education refers to the evolution of education systems according to the diversity of learners. For a better school, it is necessary to improve the effectiveness of teachers, to promote learner-centered methodologies. It is also necessary to develop teaching materials and make schools safe, healthy and accessible to all learners. Good relationships between teachers, students, parents and the whole community are also essential to the development of integrated learning environments. Examples include the Blaise Pascal University[17], which has set up a hand-up.org website to facilitate students' recruitment and young graduates with disabilities into training or employment. It connects students and graduates with disabilities to companies and administrations. This site is a tool that aims exclusively at bringing students and graduates into contact (E) disabled persons with enterprises and administrations. At the University of Paris 8, it is the creation of the Master of Technology and Handicap: Master Handi[18]. The specialty of the Master's Degree in Technology and Disability is an original and unique training which answers the strong technological demands of our society and prepares professionals who correspond to the recommendations of the existing laws and the new law concerning the integration of people with disabilities and the right to compensation. This specialty is based on the appropriation by students of new information technologies (networks, telematics, data processing, signal processing, robotics, neurophysiology...) for the implementation of solutions facilitating the socio-economic integration of people with disabilities Physical and sensory in their social and professional environment. Similarly, in University of Lille 3, premise and equipment were put in the standards and talking into account handicapped person. So, the sound borders, acquire in 200, will be installed in the whole of building. In 2004, the university library was equipped with the necessary materials for blind and visually impaired people. The software "zoomtexte" was acquired by a Training and Research Unit (UFR). The installation of this software in all the libraries university department will be spread out from 2005 till 2009. In the same way, training and a raising awareness has it organize for the staff of the university and every university department indicated a teacher-referent for the students in situation of handicap. Inside the university, the service of distance teaching developed its politics of welcome of deaf the university. Oral exams are already made possible by the presence of a translator L.S.F., students having done the training course LSF (proposed by the university department of Letters) are incited to propose their service as interfaces of communication for on-site grouping. Inclusive education thus enables people with disabilities to enjoy their right to education like all normal beings[19,20]. Thus, it is necessary: i. to conceive inclusive education as the real generalization of the system, such as education for all; ii. the approach of the inclusion has to allow to design the education system so as to welcome the differences: a respectful system of the diversity; iii. clarify the concept of inclusive education in its legal, political and cultural aspects in particular on the basis of the international capacities (instruments of United Nation and UNESCO).

In addition, Bomhommeau[21] support that the education of the blind person in not to an apart where would be used only terms answering their sensory possibilities, are used, Accessible to them. But the purpose is much rather to give most reality possible for the trouble which they will be brought to understand, to read and to use.

After all, solution exists to give to the handicapped person all the chances to study in the higher education. It is important because the handicapped persons are an integral part of the company and the right to education in the same way as the other. Furthermore as underline it the agency of study and promotion of the employment[22,23], the best service which we can return to a handicapped person, it is to allow him to work, express them, and feel useful to society like everyone else. Thus, inclusive education is an important path to this end.

Methodology

Type of research: This research combines both the qualitative approach and the quantitative approach generally used in this type of work. She can be thus qualified as qualities research[24-27] because research for information allowed to meet people resources to obtain relevant information in Côte d'Ivoire in particular have focused the inclusive education, this research is also empirical and exploratory. As for the quantitative approach, it was done according to the protocol of Yin[28], focusing on the type of research, choice of research structure, sampling and selection of respondents, instruments and data collection, treatment and data analysis and finally the strengths and limits of the study.

Choice of research structure: The Grouping for the Insertion of the Students Physically Handicapped Persons in Côte d'Ivoire (GIEHPCI) is the structure held to collect the data. This grouping was created in 1980 and began its activities in 1982. His objective is to improve the condition of the students in universities and Grandes Ecoles and to facilitate their socio-professional insertion. Currently, this structure has a little more than 800 students and has a head office named after the former first lady of Côte d'Ivoire. Objective is to improve the conditions of study of students in universities and higher schools and to facilitate their socio-professional integration. We find also within it students presenting all the chaps of handicaps.

Sampling and selection of the Respondents: The type of sample selected is the reasoned sampling because the files of the grouping were not updated; it was difficult to obtain the exact number of the members according to the various characteristics. On this basis, 54 students were selected, taking into account variables such as age groups, sex and study level (cycle). Steps were undertaken with the university authorities for their membership to this project of study, just like the level of the National Coordination of the Teachers and Researchers (CNEC) of Félix Houphouët-Boigny University of Cocody. So, on the basis of the confidence and the interest of the subject, the actors

of the school requested agreed to answer only or with the cooperation of their closet collaborators, to the entire question asked on ITCs and including education at level of the handicapped students.

Instrument of data collection: A questionnaire served as basis instrument for the data collection with the students. This tool made it possible to identify them, to appreciate their opinions on the link between ICT and inclusive education and to collect their recommendations. Two guides of interview allowed to exchange with the University authorities and the persons in charge of the CNEC.

Treatment and data analysis: Data processing called on to the computer and manual techniques. The computer approach was favored for closed questions giving rise to statistical calculations. The data processing was made from the software Excel, what has permit building the set graph which served for making analyses. To this technique was associated the manual counting for the open questions. The analysis of contents allowed having a better understanding of the answers given by the investigated.

Strengths and study limits: The methodological limits of this study would be those imputed to the limited number of students restricted for data collection. It would have been desirable to interview many more students with physical disabilities, but the period of the followed examinations the university holidays did not allow meeting more students. The second limit in this study is bound to the absence or to the insufficiency of document on the including education. This study can be considered exploratory considering her almost absence of document which deals with this generally and with its supposed or real links information technologies and with communication. Finally, it is difficult to generalize, even impossible to generalize the results to whole country. Except this aspect, methodological rigor has been respected at all levels, what establishes strength as for the scientific quality of the work.

Results and discussion

Data collection allowed to understand the stakes in the including education in the higher education. To achieve this, three major articulations have been developed: at first, the learning conditions of the students disabilities by the university of Cocody; Secondly, the consequences of this situation on students' university activities and the contribution of ICT as a solution to the inclusive education of the disabled.

Study conditions for students with disabilities: Studying the conditions of study of students with disabilities at university is tantamount to emphasizing the services offered to them by schooling, physical accessibility to classrooms and tutorials, and to the library. Services provided by university authorities to facilitate enrollment conditions seem to be appreciated by handicapped students as shown in Figure-1.

More than 53% of the questioned disabled girls are satisfied the services which the schooling offers to them. This opinion is also shared by 60% of boys mainly for the same reasons. Indeed, all appreciate the fact that the parsons in charge of the university took particular measures, towards them, as regards the formalities of registration taking into account their physical condition. It's about: i. of the exemption or the reduction of registration fees according to the wanted sector. The students fees are raised can benefit from a reduction. When these expenses are not too important, it is rather the exemption; ii. favors in orientations. Indeed, disabled baccalaureate holders are oriented according to their choice without strictly taking account of the criteria or conditions applied to other new baccalaureate holders; iii. favors at the level of the orientation. iv. to avoid that the handicapped person made the row as all other students for the treatment of their files; v. to promote bridges with the higher schools to enable handicapped people who wish to take courses parallel to the courses received at the university.

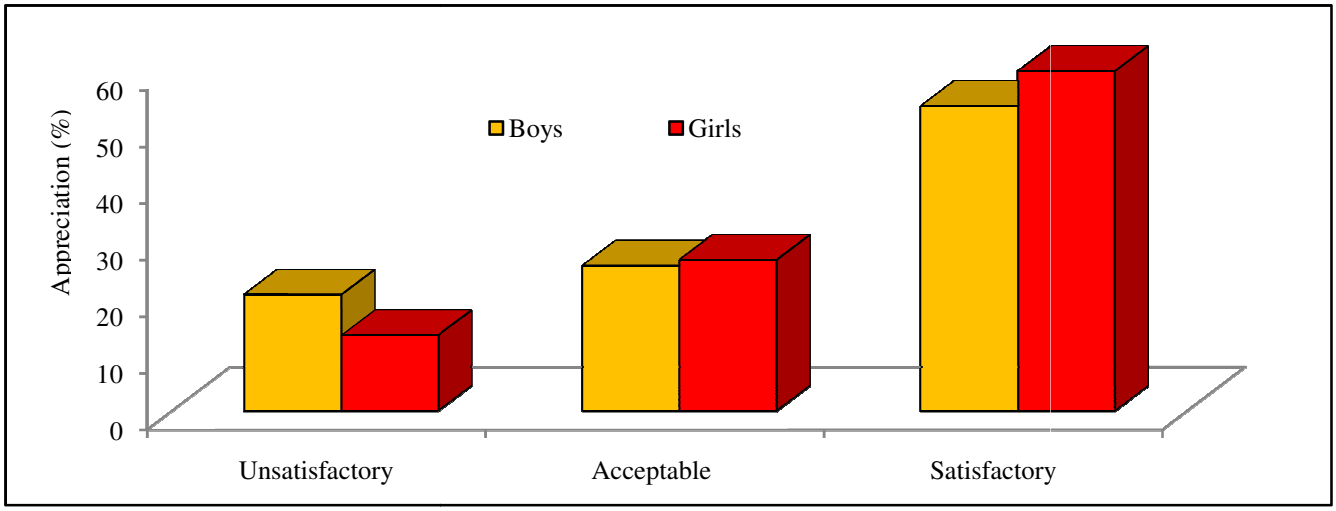


Figure-1: Appreciation of the service of the schooling by the handicapped students.

Unlike the service of schooling, several grievances are carried by students with disabilities on the conditions of access to amphitheatres and other rooms of directed work. Like the first students cited, more than a quarter of girls and boys believe that these measures are acceptable because they allow the people physical handicapped parsons to benefit from basis schooling services by avoiding jostling at the beginning of school, year. This opinion is shared by the person in charge of the schooling who considers, it is duty for the administration: "For us, it is fundamental to take into account the specificity of these students because without these measures, it is almost impossible for them to complete the registration formalities and to benefit fully from the status of student". However, some of them (20.51% of boys and 13.33% of girls) consider that the efforts made by schooling are unsatisfactory because in practice it is not still obvious for the handicapped students to benefit from all these advantages. Indeed, some of them were already pushed by the other students before being rescued by the university authorities. At the beginning of each academic year, these facts recur and become more and more regular in view of the increasing number of students. That is why they want improvements to be made in all services to "facilitate life" for students with physical handicapped. On the other hand, several grievances are carried by students with handicapped on the conditions of access to amphitheaters and other rooms of tutorials (Figure-2). The results show that none of the students in the first and second cycle questioned cycle asserts that the conditions for participation in courses and tutorials were satisfactory. It is at the level of these cycles of study that one finds the largest numbers of students within the university. The great majority of the handicapped persons (90.47% in the first cycle and 86.20% in the second cycle) are not satisfied with the conditions under which the courses are taught. Indeed, the university infrastructures built to provide teaching are not adapted to receive the students physically handicapped persons, especially those who are traveling in wheelchairs. The large numbers of students registered in training and research units (TRU) as well as the Insufficiencies of seats in amphitheaters are elements evoked the students of the first cycle. Indeed, in the first and second year in them different TRU, there are less than 11500 students enrolled while the amphitheaters, the largest have no more than 700 places.

Moreover, graduate students generally refer to the level of floors where the tutorial rooms are located. Indeed, they are located on the first or second floor of the buildings. So, how can one be in a wheelchair and access the second floor to take classes? Faced with this situation, some students do not hesitate to renounce the directed work as the respondent sustains: "In front of the impossibility to find somebody to help me walk up stairs to follow teaching, I resigned to return to students halls residence while tutorial classes are important moments to deepen the courses". This fact is lived by a lot of students being in this situation. On the other hand, postgraduate students appreciate working conditions at university. Indeed, because they are less numerous and do not have classes every day, they spend most of their working time looking for, not in lecture theaters. Even when attending seminars in a master or thesis year, the limited number of students means that there is no jostling or seating problem (Figure-3).

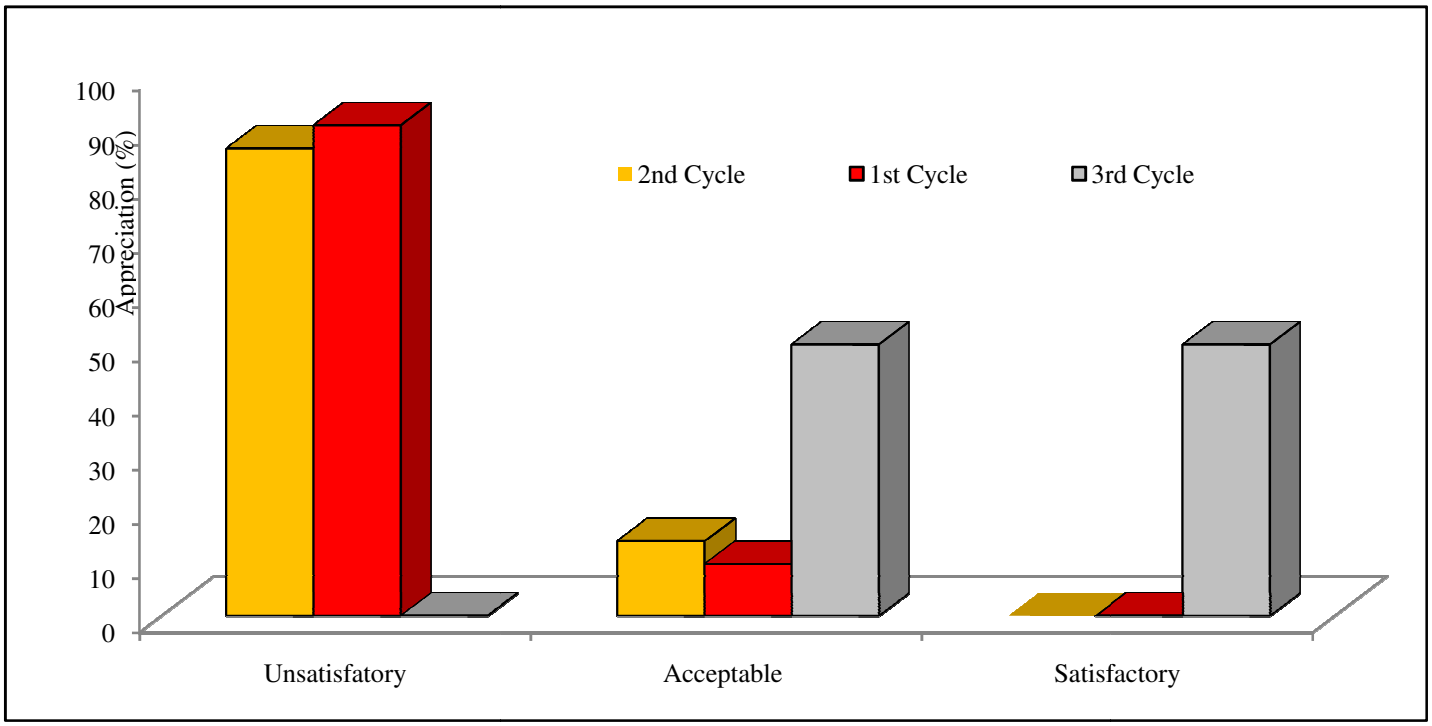


Figure-2: Appreciation of the conditions for participation in courses and the tutorials.

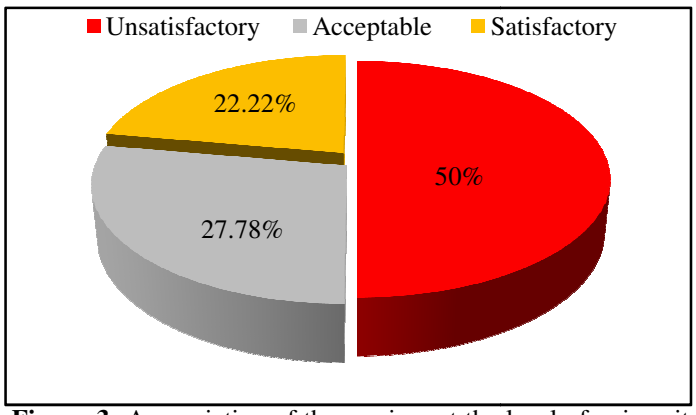


Figure-3: Appreciation of the services at the level of university libraries.

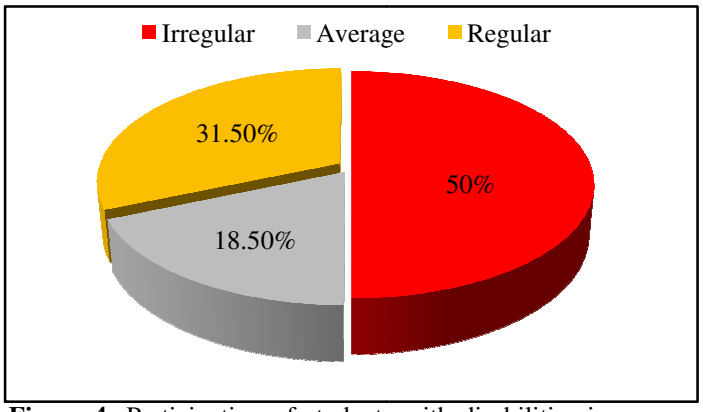


Figure-4: Participation of students with disabilities in courses and tutorials.

Result indicate that half of handicapped students surveyed find the services offered by libraries unsatisfactory. Not only these documentation centers do not arrange works of recent publication, but those whom we find are in insufficient number there. Moreover, the equipment which bookcases are not adapted to the specificities of the disabled people. Finally, some libraries are situated on the first floor, while the handicapped students are many in wheelchairs or move with crutch. In these conditions, it is difficult to them to reach these documentation centers as many, other students do. The situation is much more dramatic for the unseen because they have much more level to go up alone staircases. Also, there is practically no document in Braille to allow them to improve their knowledge, just like the modern tools developed from information technologies and from communication.

However, 22.22% of tell themselves satisfied while 27.78% find it acceptable. They are mainly handicapped in the arms and to a lesser degree, those whose lower limbs are not too affected and do not move in armchairs. Overall, university libraries have the same configuration as amphitheaters and other tutorial rooms. These infrastructures were built at a moment when there was enough handicapped person in the higher education.

Currently, the efforts supplied by the state and the partners in the development towards them make that they are more and more numerous to, but university infrastructures remain inadequate for this category of students. But we should add that there are no ramps to facilitate movement of those who are in wheelchairs, etc. What are the possible consequences of this situation in the studies undertaken by the physically handicapped?

Consequences of the study conditions of students with handicapped: Realities that the students physically handicapped person to the Félix Houphouët-Boigny University of Cocody live are not likely to favor their blooming. The direct consequences which this situation engenders can appreciate at the level of the participation in the courts, the result of the end of year and the exclusion from university activities (Figure-4).

It is important to note that the participation of handicapped students in teaching is low. Indeed, the difficulties of displacement constitute an obstacle to their regular presence in the classrooms. Half of the students assert having an irregular presence in teachings. Only 31.50% of them are regular while 18.50% are intermittent. Several reasons are moved forward to justify this fact as recognized by one of the respondents: "It is true that the hall of residence is not very distant from classroom. However, the absence of banisters allowing to move us easily and quickly made that we miss many teachings. It is true that the university residence is not very far from the classrooms. However, the absence of ramps to move easily and quickly made that we miss many teachings. To this must be added that the way leading to classrooms is also borrowed by many students not to mention the vehicles of teachers, administrative staff, delivery vehicles of goods, etc. Generally, most of the handicapped students arrive late to the courts. So, they are obliged to stay outside to take the class because of the plethoric staff in amphitheaters. This situation makes that some handicapped students, due to the lack of places which are reserved for them in amphitheaters or rooms of tutorial classes, they prefer to stay in halls of residence when they notice that they are late. The inability of students to follow all courses influences their academic performance. Indeed, the results at the end of the year remain mixed because according to the statements of the respondents, a large number of handicapped students can't validate all the units of values to go to the upper class. This situation often leads the leaders of the group for the integration the students physically handicapped in Côte d'Ivoire (GIEHPCI) to negotiate with the university authorities favors for their members. Here is the testimony of one of the leaders of this group: "We often make arrangement with the academic person in charge and those of the university work not make send back those of ours who miss credits so that they can keep their rooms in student halls of residence because many of us, considering the difficulties of access to amphitheaters and to rooms of tutorial classes, let us cross three or four years in first cycle before reaching the year of the license". Finally, one of the consequences which deserve to be not the exclusion victims of which would be count of handicapped students. It is not here

about an expulsion from the university, but rather the fact of feeling away from the university life. For half of them, everything is made to prevent them from studying in good condition in universities: academic infrastructures, sports infrastructures, accommodation, restoration, etc. In this less glorious situation of physically handicapped students - whose numbers are increasing in universities - should we abandon them to their fate or propose alternative solutions? Can inclusive education based on ICT enable a better integration physically handicapped students? What are the success factors of such a project and what are the challenges to overcome it?

ICT as support inclusive education and integration of students physically handicapped: Inclusive education focuses on children and young people with disabilities or disadvantages[10,29,30]. It allows each individual to express the maximum potential hidden in him. The goal is to provide quality education and eliminate any form of ICT discrimination in achieving this objective.

The importance of ICTs in the education is not being any more demonstrated today. Indeed, all the actors of the school are unanimous on the fact these technologies are essential to the acquisition of knowledge, to the adaptation of capacities and to the strengthening of the skills of all the people including the physically handicapped person, concerning particularly these people at the special needs, what can be the success factors of ICTs as support for the including education and which can the challenges?

Success factors of ICT as support for the including education at the level of the handicapped students: The use of ICTs as support for including education for the benefit of the physically handicapped persons in Félix Houphouët-Boigny University (FHBU) of Cocody can made by taking into account some realities which already exist regarding information technology and regarding communication.

Beginning of computerization of the services of this university: Thanks to the support of the Korean cooperation, all the services of FHBU benefit from a beginning of computerization with Internet connection. With this system, students can easily access the university website and have useful information on the various activities that are conducted in this location.

Obligation to pre-register online for all new baccalaureate holders: For the past four years, all pre-registrations at FHBU have been done via the Internet. This technological advance allows many physically handicapped graduates to choose their training paths without moving. It allows avoiding also the jostling consecutive to the plethoric number of students whom this university welcomes every year.

Access to computers for handicapped students: More than 59% of the students physically handicapped persons have access to the ICT too is within internet cafe of the grouping or the other species fitted out for that purpose on the university campus. Except these places, it is necessary to note that certain students have their own computer in room with internet connection. It allows them to perfect and to make works of office automation for the students who have no knowledge in this domain (Figure-5).

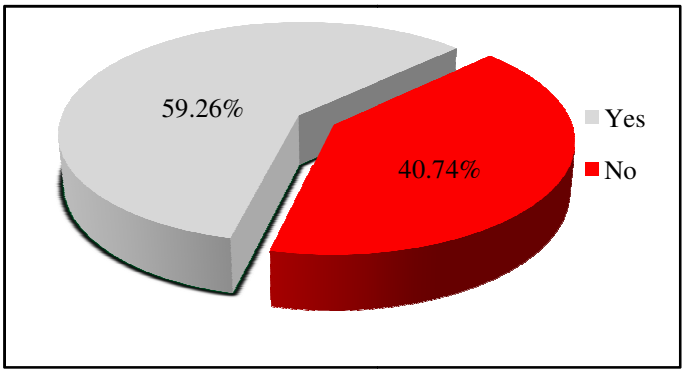


Figure-5: Access of handicapped students to the computer system.

Knowledge of some software by handicapped students: The majority of the handicapped persons (61.11%) assert practicing the word software. Some people tell to have done the training course to arrive there whereas others tell to have learnt with their friends. According to the investigated, the control of this software facilitate the writing of their memory of the end of cycle and allows them to work without resorting to the operators deprived of seizure installed on the university campus (Figure-6).

Existence of internet rooms in university residences. All the halls of residence are endowed with room with internet connection. These centers of computing resources belong either to private individuals, or to students. They allow students to search and sometimes follow online courses.

Existence of internet rooms **within the grouping for the insertion of the students physically handicapped person of Côte d'Ivoire:** The group of handicapped students was able to benefit from a room equipped in computers with internet connection to the support of certain national and international NGOs (Non- Governmental Organization). This room is also open to other students for a financial contribution to feed the solidarity fund of the group. From these results, we are tempted to assert that the including education with use of ICTs can be uninhibitedly made at the level of physically handicapped students. However, beyond these realities, it is important to note that much remains to be done to make ICTs an essential factor in promoting inclusive education.

Challenges in making ICTs an essential inclusive education for handicapped students: The challenges to be overcome are not specific to students with disabilities, but also concern teachers and university infrastructure as a whole.

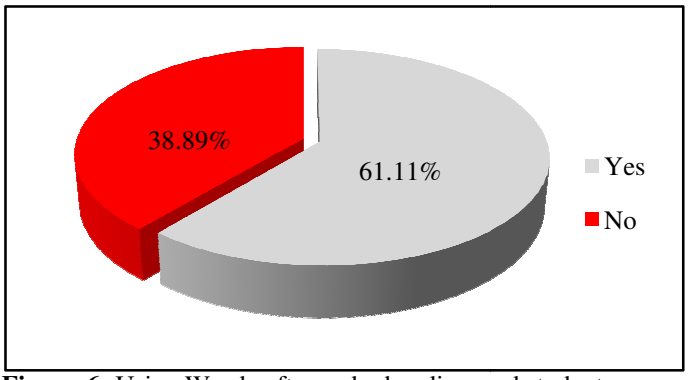
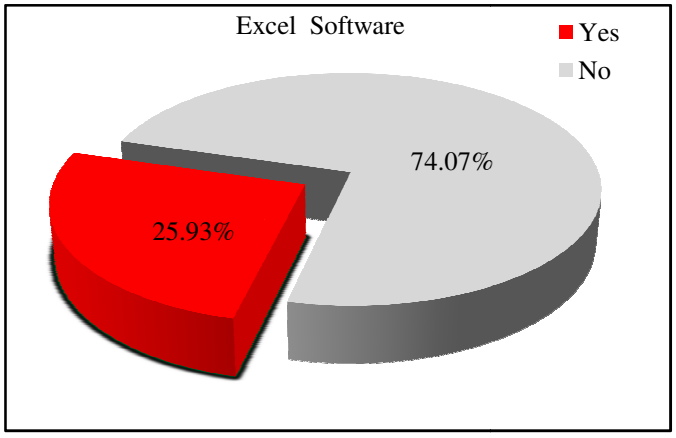


Figure-6: Using Word software by handicapped students.

Weak knowledge of students with physical disabilities in ICT: Apart from the Word software, handicapped students have weaknesses in the two other classic programs, Excel and Power Point. Only 25.93% said they knew how to use the Excel software and 14.81% for the Power Point software. The main reasons for this are the lack of computer training, the lack of access to computers for many students, the absence of computers in university programs, the cost of providing computer training centers, etc. (Figure-7).



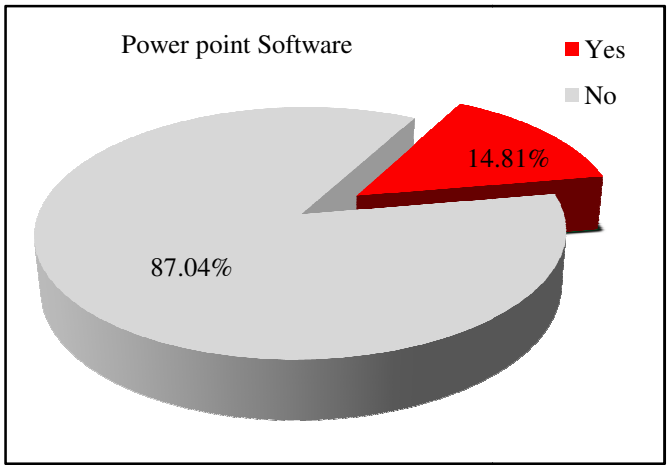


Figure-7: Using Excel and Power Point software by handicapped students.

Low access for handicapped students to internet: While it is true that more than half handicapped students have access to the computer, it is nevertheless necessary to recognize that less than 26% of these have access to internet. Despite of the presence of cybercafe in or near university residences, 74.07% of respondents assert not using internet for the reasons such as unfamiliarity with the use of the internet, insufficient financial resources to pay for connection time, poor connection quality, lack of time, etc. (Figure-8). For those who say they often use the Internet, the most visited sites are Google (for academic research), Yahoo (to exchange), social networks like Face book and YouTube (to exchange), the Wikipedia dictionary and abidjan.net. ICTs must promote inclusive education to enable handicapped students to succeed in higher education. Then it would be desirable for teachers and students to have a solid background in computer science. The data presented sometime show that significant weaknesses are observed at the level of the students? How does this situation occur for teachers?

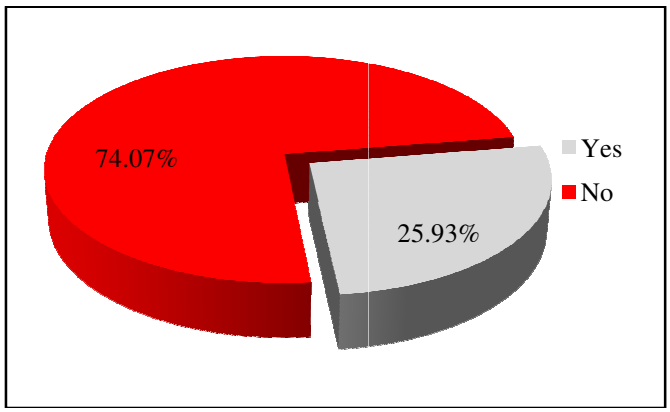


Figure-8: Accessibility of handicapped students to Inte1rnet.

Low knowledge of the ICT tool by the teacher: Many higher education teachers have difficulty using and working with computer. In the absence of precise statistics on the subject, the observation that is made is that most teachers or researchers who have more than twenty times of experience do not master the ICT as evidenced by this Master Assistant: "These devices are not of our time. We have been trained in the old school without these computers and it is very difficult for us to update our knowledge in this field. Even if we recognize the value of working with ICT, we must recognize that it is not our generation". However, the new generation of higher education teachers places an emphasis on ICTs and makes them an essential tool for teaching.

Reluctance of teachers to put online courses: Only 22.22% of respondents say that their teachers put online courses against more than 77.78% who say the opposite (Figure-9). It is not just the lack of knowledge or low use of the Internet that justifies this situation. Indeed, according to students, many teachers prefer to produce pamphlets and market them instead of putting their courses online so that students can access them free of charge.

The online version of the courses has enabled students with physical disabilities who have ICT knowledge and who have access to it to attend courses without traveling. Thus, they avoid the difficult conditions for access to the different teaching rooms. However, it is not enough just to have online courses, but you must have knowledge of how to use these courses. Responses to this concern show that few students have ever taken online courses. The results show that more than 90% of the respondents have never taken courses online (Figure-10). Félix Houphouët-Boigny University of Cocody does not yet offer courses online. The equipment of the Training and Research Units does not allow for this. Indeed, if they exist, the equipment is insufficient and aging. In addition, teachers are not yet prepared or do not master online education. In the event that teachers have started to put their courses online, students must download them, read them before a possible exchange during the course. It seems that the process is slow or even inexact.

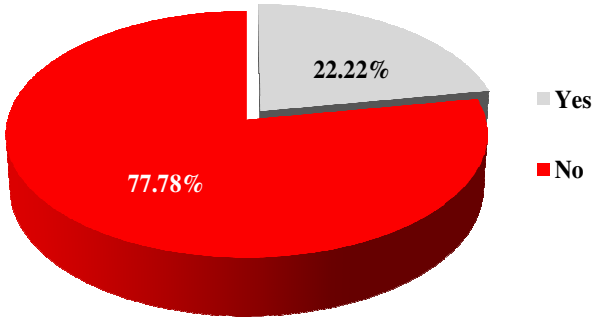


Figure-9: Online publishing of the courses by teachers.

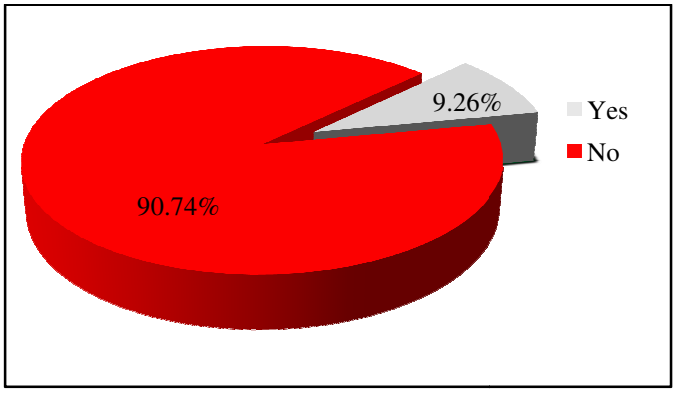


Figure-10: Follow-up of online courses by handicapped students.

Conclusion

Education is considered as a process of transformation of humanity. It includes all the types of apprenticeships, enables the acquisition and development of capacities and attitudes, as well as values, knowledge, information, etc. This in order to allow the complete, continuous and uninterrupted development of the individual. However, it is necessary to notice that a large part of the population, often called "minorities", is excluded from this process. These include mainly women, street children, child soldiers, working children, Roma, handicapped person, etc. For these people, inclusive education seems to be the most likely because it adapts to their different situations and takes into account their vulnerabilities.

As regards the students physically handicapped, inclusive education based on ICTs constitute a solution to the numerous problems which they are meet and a negative impact on their education in higher education. While all the investigated students are unanimous that inclusive ICT-based education can contributes to their academic integration and successful completion of their studies, it must be recognized recognize that many challenges remain to be overcome: i. Train teachers (old and new) and handicapped students for ICTs. This is a basic requirement before any ICT integration project in education. All players must have computer skills to be able to easily use the various software. This training also extends to the internet and its various possible applications regarding education. ii. Make teachers aware of the concept of inclusive education. Indeed, it is a new instrument in the educational system of Côte d'Ivoire and its integration must be preceded by training and awareness. Teachers take ownership of this concept and commit to providing knowledge that takes into account people's needs. iii. Encourage teachers to put online courses and to dispense online courses. Once the basic skills are acquired by teachers, they must be encouraged not only to put their courses online, but also to train themselves to deliver their courses by video conference for the benefit of students who can't attend classes directly. iv. Equip the university with computer and other teaching materials. ICTs are today essential tools for students education and training. African universities and particular Félix Houphouët Boigny University of Cocody have to get to the level of international universities by acquiring advanced computer equipment. Examples include digital libraries, media libraries for the visually impaired, braille documents, etc. Ultimately, it is to provide handicapped students with technical support, tutoring and mutualizing skills and equipment. v. Build university infrastructures, taking into account handicapped students whose numbers growing each year. These are mainly amphitheaters, classrooms and tutorials, libraries, student's housing, playgrounds, ramps, etc. Everything in the academic environment must take into account people with special needs. vi. Create a box office in the schooling only for the handicapped students. Considering the number of students enrolled at Félix Houphouët-Boigny University of Cocody (more than 54,000) and the number of handicapped students (more than 800), it is important to create a box office in the schooling, especially for handicapped students like that is made in all northern universities.

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