QUESTIONING THE SIGNIFICANCE OF TECHNOLOGIZING ALGERIAN SCHOOLS AND UNIVERSITIES: DID IT FAIL OR SUCCEED?

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ABSTRACT

The present paper investigated major reasons behind the failure of an effective technologization of schools and universities in Algeria. It also tackled the issue of teacher-student rapport in an era where the internet has become a rival for teachers. This work questioned the factors contributing to the failure of a successful integration of new technologies in Algerian classrooms. Field observations were required to collect data; four primary schools (private and public, two middle schools), two secondary schools and four universities were the fieldwork of this study. Also, as a case study, I lastly presented my personal experience in technologizing my classes as a university teacher. The results showed that social, cultural, economic and educational factors were behind the failure of a successful integration of ICTs in Algerian classrooms. Moreover, I emphasized that the teacher-learner rapport is in jeopardy because of the chaotic and ineffective penetration of new technological tools in the Algerian classroom.

KEYWORDS

Integration, new technologies, education, Algeria, technology-driven classroom, traditional classroom.

1. INTRODUCTION

Our modern age is witnessing an unprecedented meshing of education and new technologies since the latter have penetrated millions of classrooms around the world to revolutionize teachers' teaching and learners' learning. In developed countries, the technologization of education has made a big leap to reach the so-called technology-driven classrooms, flipped classrooms and even online or virtual classrooms. As for developing countries or less developed countries, the integration of ICTs has been a major objective for the governments for years, but it has not been successful yet. Algeria is one of these countries where ICTs' integration in schools was announced as early as 2004, and yet Algerian education is still traditional. [1]

A common scene in most of, if not all, Algerian primary, middle, secondary and even university classrooms is to see students sitting in rows reading from a textbook, completing a worksheet, or doing a task. The teacher is strategically placed in front of the classroom lecturing to his/her students, and each student is taught the information in the exact same way as his/her classmate. Although there is above their heads a video projector and their teacher has a computer on her/his desk, Algerian students are still perceived as knowledge receivers instead of knowledge seekers.

However, in developed countries and some developing countries like Malaysia, Indonesia, and Singapore, classrooms have become a more comfortable environment where the setting is designed in a way that makes students work collaboratively, and makes the teacher acts as not just a lecturer but rather as a facilitator or a guide for his/her students. In most developed

countries, classrooms are more technology-driven and more technology-based. These modern classrooms are different from traditional classrooms since new elements and parameters are added. For instance, in addition to the teacher and his/her students, there are computers, iPads, and Smart boards. It is noticeable that students, in a technology-driven classroom, are still taught the exact same lesson; however, with the integration of the new technologies, their teachers know that all students learn differently, and thereby are given the chance to vary their teaching style accordingly. For instance, you would see several students working on the same lesson, but they would be using a different method to get the same answer. Many of these students would be using new, innovative technology in the classroom versus reading from a book, or completing a worksheet. [2]

In Algeria, schools and universities are indeed equipped with technological tools like projectors, computers and microphones. Yet, the teaching methods and the learning process are still traditional. Despite the fact that in basic education a competency-based approach was implemented and in higher education an LMD (Licence-master-Doctorat) system was adopted, education in Algeria is still teacher-centered and traditional in most schools and universities. Thus, the present research investigates major reasons behind the failure of an effective integration of new technologies in Algerian education. Another crucial issue to be explored in this article is how the teacher-learner rapport has altered and metamorphosed with the addition of new parameters, new mediums and tools which are technology-based.

The Statement of the Problem

Many research works, articles and books that have been recently published in Algeria celebrate the use of technologies in Algerian schools [3],[4],[5]etc. However, they often ignore that in comparison to other developed countries, very few new technologies like projectors and computers were incorporated in many schools and universities all over Algeria during the last ten years. In fact, advanced technological tools like Smart boards and iPads are not yet integrated. Nevertheless, we may find many teachers using personal projectors, laptops and even smart phones. Their students, too, do have their own devices. Such classrooms do not represent a technology-driven classroom. Instead, we may refer to them as traditional classrooms assisted by ICTs, but there is no effective and strategic integration of these ICTs. Therefore, the process of technologizing the Algerian classroom is often seen as a failure. In the present study, I seek to unveil major reasons and factors that hinder teachers in Algerian schools to successfully integrate new technologies in their classrooms. I also seek to demonstrate that the uncontrolled penetration of new technologies in the classroom has re-shaped the teacher-learner rapport.

Research Questions

A pivotal purpose of this paper is to reveal a number of weaknesses for which Algerian education still witnesses a failure in using ICTs especially in foreign languages classrooms, and to re-question the role of the teacher in classrooms that are traditional but equipped with ICTs and where there are students identified as 21st century learners who are often digital natives. The following research questions were formulated to carry out the present research:

1- What does make the integration of new technologies in Algerian schools and universities a failure? And what are other solutions to successfully technologize education in Algeria?

2- How is the teacher-learner rapport changing in an era of technological advancements but in classrooms that are still traditional?

Hypotheses

This paper aims to expose reasons and factors behind an effective technologization of Algerian classrooms and to understand how the teacher-learner rapport is changing due to the permeation of new technologies in the learning and teaching process. Therefore, to attain this objective, I hypothesize that:

1- In spite of the many factors that impede the successful technologization of the Algerian classroom, teachers and learners should be given the chance to personalize their teaching and learning, and they should be allowed to use their personal electronic devices to be employed as their own learning tools.

2- I also insist on the fact that it is of paramount importance to recognize that the learners we have in our classrooms today are quite different from those we had ten years ago. As a result, educationalists should understand the new rapport that teachers should build with their learners to realize a strong connection between the two with the support of new technologies that could play the role of a medium.

2. LITERATURE REVIEW

Integrating New Technologies In Education

The first fact to start with is that the integration of Information, Communication, and Technology (ICT) in education refers to the use of computer-based communication that incorporates into daily classroom instructional process. In conjunction with preparing students for the current digital era, teachers are seen as the key players in using ICT in their daily classrooms. [6] Also, ICT integration in education generally means technology-based teaching and learning process that closely relates to the utilization of learning technologies in schools. Due to the fact that students are familiar with technology, it is assumed that they will learn better within a technology-based environment and in a technology-driven classroom. [7]

In contrast, in a traditional classroom, there is a one way flow of information in which the teacher often continuously talks for an hour or more expecting that when she or he asks a question, the students will able to reproduce the same thing that she or he was talking about. Even when the teacher uses new technologies as a support, she or he uses them with a teacher-centered approach, i.e. students follow what the teacher displays with his/he computer or on the screen with the video projector, so it is always the teacher's instructions that students are waiting for; in this way, they are left no space for autonomy and learner-centeredness while following their teacher slavishly. Also, students are not allowed to use their electronic devices, particularly mobile phones when the latter have become part of their physical being and using them is a daily routine.

Algerian classrooms may represent a typical traditional classroom assisted by ICTs. Though new information technologies were meant to be integrated as early as 2004, but educational institutions are not a technology-driven environment. John Dewey says that if we teach today's students as we taught yesterday's, we rob them of tomorrow. Dewey's words do reflect the way educational institutions, in Algeria, have failed to implement the right approach that meets 21st century learners' needs which are in a constant change since the world outside the educational institution is changing so fast. To teach students of the 21st century the same content, even if textbooks were revised, is one of the biggest failures of this educational system.

Icts In The Algerian Classroom: Effectual Or Ineffectual?

The implementation of ICTs in Algerian schools, colleges and universities is still at infancy though it has been more than a decade since policy makers announced that there would be a modernization of the Algerian educational system and that new information technologies would be at the heart of this modernization. It is undeniable that the Algerian government (s) made efforts to promote the use of ICT tools in teaching and learning; however, there are still many barriers which include connectivity issues, readability of teachers, learners and their parents, the high cost of infrastructure whilst there is an economic crisis in the country, and above all the lack of training that prevent teachers and their learners from taking advantage of the ICTs' potential. Algeria is in the early phase of ICT integration although there are considerable investments of the Algerian government to enhance a national ICT policy and update the educational field by setting various programs such as the E-Algeria. [8]

In Algeria, as geographically the biggest country in Africa, there is a technological gap between its different regions since urban and metropolitan cities –mainly those situated in the north of the country –are more privileged in terms of technologization and access to internet than many other cities of the interior regions and the Sahara. However, most schools and universities around the country are equipped with computers, video projectors and other new technologies. The one essential distinction is the readiness of their use in these institutions and the efficiency of their integration in the classroom.

In an interesting study, Ladaci (2017) investigated the status and teachers' perceptions towards the use of ICTs in the English as a Foreign Language (henceforth EFL) classroom. In order to gather the relevant data, Ladaci administered a questionnaire to ten teachers from the department of English in El Tarf University in the east of Algeria. When asked to state the barriers that prevent them from incorporating ICTs into their teaching, the respondents mentioned lack of technological materials, unfamiliarity with technology, and lack of time, training and support.[9]

Albirini argues that effective implementation of technological devices into the classroom environment depends largely on teachers' perceptions and attitudes [10]. It could be assumed that teachers who have positive perceptions toward technology feel more comfortable using it and are more willing to integrate it into their teaching [11]. In Ladaci's study (2017), the researcher, when exploring teachers' perceptions of technology incorporation in EFL cl4assrooms, found that teachers from the department of English in El Taraf University in the east of Algeria do hold positive attitudes and are aware of its importance as an instructional medium. In fact, this attitude could be the common one among most teachers in Algeria. So what makes the integration of ICTs a failure?

In their remarkable and original study, Berbar and Ait Hamouda [12] could summarize most of the barriers that teachers –only those of university in their research –are encountering and struggling to face in their classrooms. a major hindrance was found out to be the lack of appropriate materials and resources such as data shows, head projectors, computers, and the absence in many classrooms of sockets where to plug the tools, which impede the utilization of ICTs in the classroom. This obstacle is viewed as an economic factor.

Another hindrance is the students' unfamiliarity with ICT tools. In fact, although the majority of students –mainly of middle/secondary schools and universities –are familiar with the use of different social media, they do not use their electronic devices, be it the smart-phone or the laptop, in the correct way of getting reliable data to fit their academic needs. Moreover, even the

use of word processing is a challenging task for them. This obstacle concerns the level of technology literacy.

The third obstacle is the lack of internet access at home, and I assert that this is the biggest problem teachers could face though 3G and 4G connections are now accessible by many students and many teachers, and yet in classroom access to internet is often impossible. Also, there are still many interior regions that do not have internet, and many campuses too are not all equipped with ICT facilities. Again, this obstacle is due to the absence of a good financial support of educational institutions.

A fourth major obstacle that hinders the effective use of ICTs with students is the crowded classrooms and amphitheatres (more than 30 students per class, and more than 100 per amphitheatre). This may interfere with the smooth progress of the lecture. At this point, one would counter-argue that in private schools crowded classrooms and access to technological equipments are not an issue. However, as it will be argued in the following section, even in private schools ICTs are not well-used and effectively integrated. Tentative explanations will be given below.

Private Schools In Algeria: Luxurious, But Still Traditional

Private education, in Algeria, is still at its infancy though it has been fourteen years since the first private schools were founded. In October 2004, the government enacted a law to authorize individuals to found private schools with conditions set by the ministry of education. The most important condition that private schools should abide by is teaching the same syllable as public schools and to take the same final exams. Up to 2018, there were more than 380 nationally accredited schools. Most of these private educational institutions are found in big cities like Algiers, Oran and Annaba. In other cities of the interior and Sahara region, there are very few private schools.

In a television report that goes back to October 2015 and which was broadcasted on Dzair TV , the owners of a number of private schools in Algiers argue that education in these schools is of a high quality and that the success percentage in primary, middle and secondary level is always high. They also assert that many parents, both rich and middle class, do prefer to have their children educated in private schools because of the comfort, the security and the seriousness that they find in these schools. So, it is obvious and evident that students in private schools do have more opportunities to have a better education because the number of learners per class is few, and because teachers are well-paid. Also, the good quality of equipments and classrooms furniture that private schools offer is of paramount importance for the psyche of the learner. Unlike in public schools where broken windows, dirty toilettes and old furniture are found, in private schools everything is in order and the environment is so clean that it makes learners love to be in that space, and this is often not found in public schools.

However, these private schools are not categorized as technology-driven or smart schools as it is the same syllable, same textbooks and same approach that are found in both private and public schools. Moreover, to identify schools as smart, one is referring to a full integration of new technologies: the smart board, Ipads, and blended learning approach. In fact, there are only four smart classrooms in Algeria which were founded by the Ministry of education with a partnership of SAMSUNG in the school of excellence in Mathematics in Kouba (Algiers), in Lotfi secondary school (Oran), Ibn Badis secondary school (Constantin) and Hakkoumi Laidet secondary school (Adrar) . As for private schools, most –if not all – of them, do not have similar smart classrooms. Therefore, one can notice that even in private schools, education is still traditional, but often

supported by ICTs. More arguments will be presented in the following sections via fieldwork data and observations.

3. RESEARCH METHODOLOGY

The Design Of The Study

The present exploratory research analyzed and investigated of the integration of ICTs in Algerian educational institutions. To realize the present research study, I selected two public primary schools, two private primary schools, two middle schools, two secondary schools and four universities to be the fieldwork of my investigation. Also, I would refer to my personal experience in integrating ICTs and new technologies in my classes, and it would be used as a case study from which many conclusions would be drawn.

Research Tools

No questionnaires and no interviews were used to collect data. Only observations and fieldwork data were necessary to draw conclusions. Indeed, there was no need to use questionnaires or interviews because the ultimate objective of this research is to expose the failure of the integration of new technologies in Algerian schools and universities. The issue to be discussed and investigated in this article is not whether teachers, in Algeria, use effectively ICTs or not as it is obvious that instructors are always looking for successful and effective teaching approaches and methods. The issue is rather related to the many challenges and obstacles that prevent these teachers to use new technologies as an aid and support. Therefore, this study is an observation-based type of research and its data are qualitative and not quantitative.

Procedure

As it has been mentioned earlier in the introduction, the fieldwork of this research included two public primary schools, two private primary schools, two middle schools, two secondary schools and four universities. The selection of these schools and universities was at random. They are situated in different cities of the country so as to have more valid data that can be generalized over all schools and universities of Algeria. More information and details about the selected schools and universities are displayed in the following table:

The educational institution	**Public**	**Private**	**Traditional (with a partial integration of ICTs)**	**Technology-driven (with smart classrooms)**
Boukhdimi Allam (Primary school, city of Oran)	X		X	
Khadija Oum Almouminin (primary school, Algiers)	X		X	
Alhayat School (primary school, Oran)		X	X	
Tayf School (primary school, Algiers)		X	X	
Tandjaoui Middle school (Oran)	X		X	
Benzerdjeb Middle School (Mostaganem)	X		X	
Lycée Alakid Lotfi (Oran)	X		X	Only one classroom.
Lycée Descartes (Algiers)	X		X	
University of Abdelhamid Ibn Badis (Mostaganem)	X		X	
University of Sciences and Technologies Oran (USTO)	X		X	(it has an online learning platform.)
Djilali Liabes University (Sidi Belabess)	X		X	
Algiers University 3	X		X	

4. RESULTS

The chart above displays the different educational institutions that I have visited to see if ICTs are integrated. As the reader can notice, all of these institutions, from primary to university and both public and private, do not represent a technology-driven environment. As for the aforementioned universities, one should mention that Aboubakr Belgaid University of Tlemcen, which was not part of this investigation, together with the university of Sciences and Technologies of Oran (USTO) and Bejaia University do have an online learning platform. However, these platforms do not make of these universities modern and technologized institutions since ICTs and new technologies are not fully integrated in all faculties and institutes. On another hand, it is worth mentioning that many university teachers, and even high school and middle school teachers, make great efforts to transform their classrooms into a technology-driven environment by using their own and their students' personal electronic devices which are most of the time either mobile phones or laptops. These teachers, who are often young and/or newly recruited, are making attempts to personalize their students' learning and to customize their way of teaching to fit their students' needs, learning styles and interests.

In the next section, I will report on my own experience as a university teacher at the department of English in Mostaganem University. This personal experience of more than five years of attempts to integrate new technologies in my classrooms or amphitheatres has resulted in more modern classrooms with real 21st century learners and teacher, and yet still not technology-driven as it will be explained later in the next section.

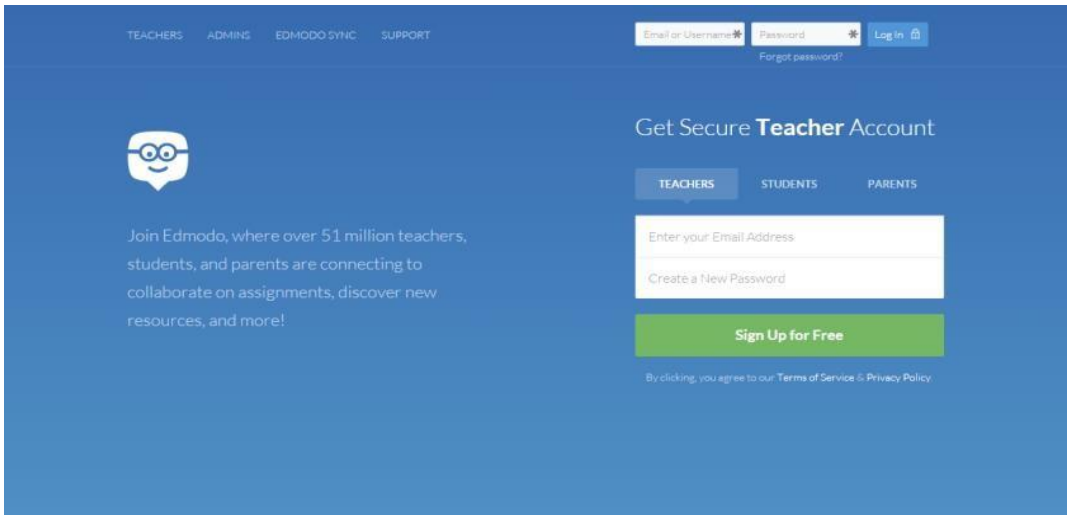
5. DISCUSSION

Personalizing the Integration of Icts to Overcome Existing Obstacles

In 2010, a new master program was launched in the department of English at Mostaganem University: Applied Linguistics and ICTs. For this new program, I created new courses and designed new programs. One of the new modules I created was e-learning, which was later re-titled as 'blended learning'. As the content of this module's program necessitated new teaching tools, I had to implement new teaching approaches and to integrate new technological tools in order to use effectively ICTs. In addition to the use of projectors, laptops and mobile phones, I had to introduce my students to new learning strategies and tools, new notions and new learning environment other than the classroom. This included MOODLES, the flipped classroom, mobile learning, blended learning and virtual education. These approaches, however, required technological materials like access to internet, creating online classes for students and following the students' progress on the MOODLES they chose to attend. Unfortunately, most of the times, I and my students found ourselves obstructed whenever new technologies were needed. The no-access to internet in the classroom, the recurrent electrical cut-offs, the many students who could not afford needed materials, and the badly equipped classrooms we had to study in were the major handicaps that made my attempt to create a technology-driven classroom end with a failure.

Two year later, and after struggling with the same conditions and facing the same obstacles for years, I decided to embrace other approaches and to introduce my students to the idea of using social media for educational purposes. Therefore, instead of creating a flipped classroom, Facebook closed groups were created to fit all students' economic situations . Also, mobile phones of students were allowed to be used in class so as to use their e-dictionaries and google to look for newly introduced concepts. However, these were also failed attempts. The first reason behind this failure is the students' readiness and maturity. Allowing students to use their mobile phones often contributes to making students distracted particularly if they have access to internet on their mobile phones. Also, joining students on Facebook groups did not often work as most students were not responsive to the teacher's posts. Moreover, Facebook has always been considered, by most students, as a space for entertainment and cannot be an educational environment. So, these tools were not as effective and efficient as I expected, and my classroom did not reach the status of a technology-driven environment though it had some characteristics of a modern and technology-assisted classroom.

Having encountered these challenges, I started looking for new facilities and new tools that would make my classroom modern and technology-driven. EDMODO platform was one of the solutions I thought of. Edmodo was founded in 2008 by Nicolas Borg and Jeff O'Hara. This platform is, in fact, considered as a social networking site, and it is very similar to Facebook in its design and the many options it has. Below, the picture shows how EDMODO looks like.



What I found special in EDMODO as an educational platform is that provides a secure and easy environment where students can share their content, and access several activities, evaluations and notices. On EDMODO, the teacher can easily follow the students' progress. All evaluations and grades are easily stored and accessible anytime. It can be accessible online and by mobile devices (including Android and iPhones).

From the description of EDMODO platform, one would expect that using it as a tool to flip the classroom must be successful. However, my one-year experience with one group of master students using EDMODO was a failure again. While many students interacted with me on the platform, many did not. Out of 56 students, only 26 were as interactive as they should be on EDMODO by answering quizzes, commenting on my posts and sending messages to ask for extra explanations or information. The 30 students who did not join us on EDMODO could find many reasons for not using the platform. 12 students said they downloaded the mobile application of the platform on their mobile phones but they could not use it for the slow speed of the 3G internet. Others, 08 students, said they did not know how to use it so they got bored, and the remaining 10 students found it useless and a waste of time to use EDMODO.

From the students' reactions and responses stated above, one would notice that many students were reluctant in using EDMODO. The failure of flipping the classroom on EDMODO was not due to the lack of equipments and ICTs, nor due to the ineffective use of new technologies, but it was rather due to the lack of the students' readiness and willingness. Therefore, I assert that technologizing the classroom or the institution is not only a matter of equipping the rooms with new technologies and ICTs, but it is also a matter of modernizing the students' intellect and habits. The lack of awareness and the inappropriate use of new technologies by students is the first obstacle the teacher faces. Students of all ages and levels, in the Algerian context, come to the educational institution with their own devices, but they do not integrate these devices in their learning process. Apart from e-dictionaries and translation applications, their devices are often full of music applications, social media applications –Facebook, Instegram, Viber, Snapchat, and others –and many files of pictures and videos. It is not common among students, mainly those of higher education, to download applications of TED , Khan Academy, Coursera, Mindvalley and other educational mobile applications. Therefore, they are not familiar with the idea that their personal devices can be an educational tool.

Nonetheless, our students are smart enough to know how to use their electronic devices for educational purposes when they need to do that. It is easier for students to use internet to search

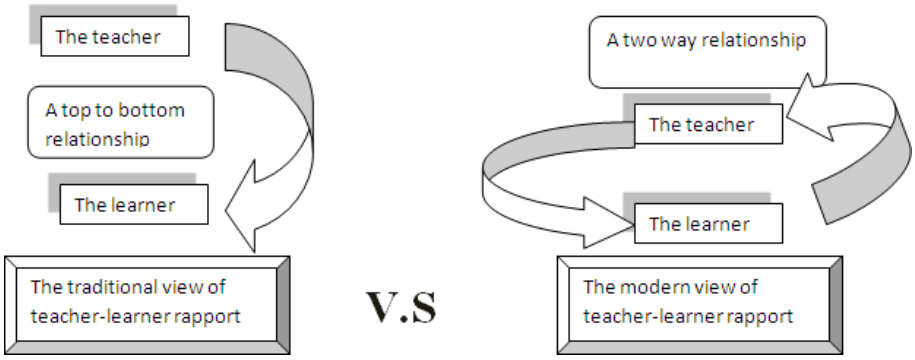
for information because they are 21st century learners and most of them can be considered as digital natives and more familiar with new technologies than their elders. For instance, if the teacher asks the students to prepare a presentation for the next session, they know how to google to find necessary information. They sometimes even find information that the teacher himself/herself does not know. This is what may make students consider being in a classroom with a teacher useless and a waste of time, particularly in languages and social sciences classes. This leads me to the next point in this research which is the teacher-students rapport in the 21st century classroom.

The Metamorphosis Of The Teacher-Student Rapport In The 21st Century Classroom

The rapport between the teacher and the student refers to the relationship between the teacher and the learners. This relationship is discursively, culturally and socially constructed. The students come to the class with presumptions and perceptions they acquired from their social and cultural environment, so does the teacher. Unfortunately, teachers in Algeria do ignore the changes that have occurred to the type of the learners they have in their classrooms. Many teachers are old enough not to be able to recognize the characteristics of generation Z who are young people born between 1995 and 2009. They are so familiar with internet, and have had technology like smartphones, iPads, smartboards and other devices available throughout most of their schooling. Although many Algerian learners in rural areas and those who are financially incapable of buying these electronic devices cannot be viewed as generation Z, thousands of young learners in most regions of the country do belong to this generation. The other category of younger learners is Generation Alpha, i.e. those youngsters born since 2010 . These learners are younger than smartphones, the iPad, 3D television, Instagram, and music streaming apps like Spotify, and their lives are technology-dependent. Again, when referring to this generation, many Algerian younger people do not belong to this category because they were born to poor, or conservative families who did not allow them to own a smartphone and have access to internet due to religious or cultural reasons.

Considering that the majority of Algerian learners either belong to generation Z or generation Alpha, the teacher now has powerful rivals which are the internet and the many technological devices available at the fingertips of our students. Teachers must understand that the students we have today in our schools are intelligent, independent and extremely competent. Considering the fact that these students are also skilled with technology and comfortable with global and intercultural communication they get from social media, Algerian teachers need to be forward-thinking, curious and flexible. The teacher's authority as the one knowledge-holder must come to an end because the unlimited access to all sorts of information our students can get from google or other websites makes the teacher one of the many sources of information. Students often consider what they get in class with their teacher as boring and redundant because they know they can get it at home via their personal devices (computers, Ipads or smartphones). It is as if the student can have the same information as the teacher, and it is in this sense that teachers must view themselves as learners too: learning new ways of teaching, and learning alongside their students.

Therefore, the new rapport that teachers must build with their learners is a one of partnership and mutual dependence. It is unreasonable to think of the teacher-student rapport the same way we used to do a decade ago. What teachers have to re-consider is the student's learning autonomy and the teacher's limited knowledge vis-à-vis what students can get from internet. This new rapport is not a direction from top to bottom but a one from side to side as the schema below shows:



6. CONCLUSIONS, RECOMMENDATIONS AND FURTHER PERSPECTIVES

Throughout the present research, the major quest was to understand why the integration of ICTs in Algerian educational institutions was/is a failure, and to draw attention to the changes that have occurred to the teacher-learner rapport in the Algerian educational context where new technologies have become the one rival to the teacher since they are not wisely used by students. In fact, it is quite complex to come out with conclusions and to suggest solutions to effectively technologize educational institutions in Algeria. First, the country has deeply rooted differences between the many regions of the nation. Some of these differences are cultural since every region in Algeria has its distinct cultural traits. Other differences are geographical: the north of the country is coastal and mountainous while the south is Saharan. Politics also creates distinctions among Algerian regions. Northern metropolitan cities of Algeria like Oran, Algiers, Bejaia and Annaba are more privileged in terms of infrastructures and therefore their schools and universities are well-equipped and well-financed. Cities of the South have always been less privileged. The manifestations of March 2019 in Ourgla, an important city in the Sahara, could be viewed as a backlash to the gap that is getting wider between the north and the south of Algeria. In fact, these differences have resulted in technological and educational gaps. So, to trace the effectiveness of ICTs' integration in Algerian schools, one should take into consideration the aforementioned differences so as not to generalize facts.

However, it is not impossible to technologize Algerian classrooms since many essential elements are available, including electronic devices of students and their teachers, 3G or 4G connection and many teachers who are enthusiastic and ready to modernize their teaching and their classes. Also, it is not always a necessity to integrate ICTs, but it is always a necessity to personalize the instruction and to differentiate the way students learn in the classroom whether they are young or old learners. Experts in the ministry of education, teachers and even parents must understand that younger people are technology-dependent, so depriving them of their devices wouldn't be helpful neither for learners themselves nor for their teachers. Therefore, it could be more effective to allow learners to use their own devices under the supervision of their teacher. In this case, the learner may feel not only comfortable with his/her own device but also responsible of his/her own learning, mainly students of middle and secondary schools and university.

The other recommendation that should be taken into consideration by teachers is the arrangement of the classroom and the setting from primary schools to universities. The way our classrooms are arranged must change. Instead of rows configuration or columns configuration, a horseshoes or a U-shape model is recommended to support a more modern and student-centered learning environment because this model supports both student-to-student interaction and teacher-to-

student interaction. Clustering the desks and tables into small groups is also effective as it supports student-to-student interaction, and it offers a more comfortable environment.
A last recommendation to be put forward in this conclusion is the teachers' perception of their learners. A 21st century learner must be perceived as a 21st century learner not as a 20th century learner. That they are digital natives, that they are technology-dependent and that they are internet beings make them look different and behave differently. Therefore, teachers must re-think their rapport with their students as it has already been highlighted in the previous section.

To conclude, Algerian schools and universities cannot be modernized only by equipping the rooms with head-projectors or computer, or by creating platforms for students' registrations. The Algerian educational system can be modernized only by changing the mentalities of those who are in charge of education in Algeria: teachers, policy makers and parents. Reforming textbooks according to the skills, needs and preferences of the 21st century learner must be a priority. Personalizing the learning process by allowing students to use their own devices so that they take in charge their own learning and become autonomous is another important thing to do if we want to change the Algerian school.

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