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# Use of the blog for the development of a higher basic mathematics didactic unit (8th grade)

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***Abstract***

*The purpose of the research is to present the use of the blog as a didactic-technological resource, to develop a Higher Basic Mathematics unit (8th grade), in order for students to achieve meaningful learning, taking into account the importance of incorporating Information and Communication Technologies in the teaching-learning process, thus giving a different pedagogical horizon, since in general there are discontents in the understanding of concepts; In addition, the subject is usually seen as abstract and impractical in everyday life. A descriptive research was carried out with a qualitative approach, achieving that through this proposal a strategy is shown that facilitates the academic and innovative work of the teacher to offer a viable response to the students, presenting the subject from a more practical and real perspective, given the facilities offered by web 2.0 resources.*

***Keywords***---*Mathematics, ICT, blog, didactics, meaningful learning, web 2.0.*

## Introduction

It is common for mathematics to be a problem for many students and their representatives; leading this to the teacher questions about their strategies and resources used to teach; Certainly, this happens due to the complex conception that this subject has at a social level, where it is believed that it is of little practice once the studies are completed (Caballero, 2016).

The methodology based on the way of teaching Mathematics and the excuse of why it should be taught, gathers much value in the present, having to do with the interest of various mathematicians, who have made notable contributions related to the subject, where it is valued what form should solve problems and the value in the advance of inconveniences, in addition to the relevance in the improvement of the way of reasoning of people in their day to day. Mathematicians have had an interest in the teaching of this science, evidencing the urgency of revealing conceptions in the way of teaching (Bolognani, 2015).

Currently, there is sufficient bibliography addressing the subject; of how to achieve a pleasant and efficient point of view of mathematics, seeing it as an exact science, which provides a real description of the world (Pino L. and., 2015). In the same way, it is evident that the media have a perspective of the subject as a universal language that represents the whole of the sciences, existing at the present time countless productions, documentaries and channels on mathematics that would interest young people today. An example of this could be found in the film by Zemeckis (1997), which had a plot related to "mathematics is the universal language" (D'Amore, 2005).

Regarding current trends in the teaching of the subject, Information and Communication Technologies (ICT) play an important role, which have a strong influence on experiments by directing mathematics education adequately from the first levels of teaching, to achieve its use, but obviously, there are events such as the lack of training of teachers, accessibility, among others, that hinder finding the appropriate ways for a teaching that is viable for the student (Serrano, 2015).

That is why, the importance has to be put in the understanding of ways and forms of teaching, that in the practice of routines that currently absorb a lot of the time of the students; then, what is really important would be the preparation of the students for the correct management of the ICT resources that already exist and have been put into practice, others not yet.

Knowing that the use of ICT requires creativity, being one of the factors to take into account in the teaching of the subject, the motivation that corresponds to the attitude one has towards the study of it, both factors being determining in learning success, as the author Mora (2013) rightly determines, students "should not start learning with ideas and with abstracts, but with perceptions, emotions, sensations, movement obtained from the sensory world and as a reaction to the real world" ( p. 192).

For all the aforementioned, it should be noted that the teacher must be aware of the student's motivation, as it is an essential factor when transmitting knowledge, going beyond a personal interest in mathematics (Álvarez, 2015), since that in current times there is a dominant tendency to belittle the exact sciences, many adolescents aspire to be influencers, youtubers or venture into other types of ventures, so it is necessary for the man-internet relationship to achieve a balance.

Meanwhile, it must be said that this 21st century cannot deny that there is an urgent need to take into account the use of ICT in the classroom from an educational perspective, as well as the importance of implementing it throughout the teaching-learning process. The world of information is having such a special place that education should not be left behind in the use of technological tools to transform said information into knowledge (Moreira & Rivero, 2016).

Therefore, the use of ICT also involves the treatment of a new didactics, since in recent years many rooms have been provided with resources for technological work, and it has been proven that a new didactics based on the development of the way of thinking and learning, that takes into account the autonomy and personalization of education (Rueda, 2016).

On the other hand, it is necessary to highlight that one of the obvious objectives of education is to educate educated people, this involves teaching individuals who have a way of seeing Mathematics that helps them acquire qualities to decipher and critically examine information on the subject. , logically supported by data, in addition, the student should project competencies to share important information and be able to solve mathematical exercises that he finds in his daily life (Flores, 2015).

It is not about training devoted students towards mathematics; but to show them that they can acquire literacy or expertise that helps them make use of Mathematics to solve everyday problems, and that in turn are reflective of what has to be achieved with the use of it.

This article is not intended to present a revolutionary and permanent methodological proposal, since every process is subject to constant evolution and improvement, nor is it intended not to evaluate the efforts that teachers in this area offer on a daily basis. Also for the author it has been frequent in the investigation of the bibliographic literature to discover articles and positions of authors that are framed a lot in the subject of the methods or strategies that are not viable or wrong in teaching, or the urgent change of the educational system, and It has taken the path of not following this position of criteria, but to offer an innovative and hopeful way for the problems that traditionally have with Mathematics.

In context with what has been proposed so far, through the method of observation by the author and in informal dialogues with students, the flaw about the difficult understanding of the didactic units of Mathematics was evident, for conceiving them statically in a book text or non-interactive, therefore, taking advantage of the reality that our students are a digital native generation in which their ways of communicating and understanding the world are completely different from the societies of 30 years ago, the question arises: What tool ICT could be used to capture didactic units of the Mathematics subject to facilitate the understanding of content and exercises for 8th grade students. Higher Basic degree ?, Using the blog would be quite useful to facilitate this realistic practicality that you want to

achieve and enrich communication between teachers and students, since it is an enjoyable and simple ICT tool in terms of its manipulation, In addition, it could be motivating, due to the interactive resources that could be incorporated there, being a novel way of sharing information and of great benefit to achieve significant learning in Mathematics (Pinto & Felcher, 2015).

Through the specific didactic proposal that will be detailed in this article, you want to teach that through a blog you can expose Mathematics content, using digital resources and ICT tools to make teaching enjoyable and fun, achieving significant learning.

Among the authors consulted for the preparation of this work, the following stand out:

Morales (2010) who carried out an article in Spain where he analyzed the educational advantages of using the blog in the area of mathematics and the contribution to personal teaching of both the teacher and the student, He concluded that the use of this tool increases the possibilities of collaborative work, allowing the actors involved in the educational process to increase their digital skills.

Rey (2016) who provided a methodological project in Spain based on the use of ICT tools, the stated objective was to improve the digital competences of the teachers of the plant and make them use the benefits of web 2.0 in the subject of mathematics, At the end of the whole process, the proposal was evaluated, where it was possible to demonstrate a high degree of student satisfaction with the incorporation of this methodology.

An investigation carried out at the University of Valencia in Spain by the authors Joan Úbeda Colomer and Joan Pere Molina Alventosa, in 2016, was also reviewed, entitled: "The blog as a didactic tool in physical education: the perception of students, "was the study of an innovative experience with the use of the blog, how students perceive this tool was analyzed, this article ends by highlighting the usefulness of the blog to incorporate open methodologies that promote participation and make dealing with theoretical topics of The matter.
Santos (2014) who developed research on the use of the blog as a tool to evaluate a curricular internship of a degree course in Mathematics from a public university in Brazil, chose a blog so that the student learners could narrate about their experience of being a teacher , ended by talking with authorities of this ICT resource to take actions and leave a training plan for teachers who start in this educational area, came to make the proposal for the potential that the blog undoubtedly provides in the educational field and communicative.

Piccini (2015), who presented a virtual training project in Argentina whose main task was to develop technological resources that are easy for students to understand, this proposal was always linked to the area of mathematics based on problem solving using Geogebra, it is important to highlight that the blog was used to communicate ideas, proving that the tool is very useful to innovate in these times when creativity is needed.

Llamo (2012), who carried out a study in Lima, Peru, which aimed to check the effectiveness of the Blog as an ICT tool for learning mathematics, the results showed that the use of the blog effectively arouses great interest in students to learn mathematics, because it allows interactivity, in addition to being accessible from anywhere.

Paredes (2016), who investigated in Peru on the use of the blog to develop mathematical communication in high school, used the observation technique, the results showed that the organization of mathematical thought through communication is done in the blog of Written, oral form through explanations and graphics through the interaction that the platform allows, regarding the communication of mathematical thought, the blog is used to report definitions. And finally, the analysis and evaluation of methods is carried out through comments to the publications. It can be said that the use of the blog is a strategy that allows student motivation while also improving their communication skills.

Sánchez (2016) who carried out an exploration in Peru that aimed to determine if the use of the blog in a physics course influenced the academic performance of the students, the study was experimental, and concluded that an adequate use of the blog effectively leads to good academic performance.

Álvarez et al (2015), who carried out a study in Bogotá-Colombia entitled: "Motivational factors for mathematics classes", was recorded in the memoirs of the District Meeting of Mathematical Education (EDEM), in itself, the document deals with a way used to solve the problem of motivation in the classroom and the contribution of work related to the aspects found to motivate students in math classes, it was determined that the use of different tools could generate motivation in students.

Pino (2018), it is important to name him, who offered in Colombia a proposal for a blog focused on providing help in academic performance and the way students have to view the subject Mathematics, since there is no good reception for this subject, the Results showed that the use of the blog to carry out academic activities is pertinent due to the impact it causes on students, which leads to a general improvement in their performance.

(Rincón, 2015), who found out in Colombia and affirmed that the use of the blog in the university environment is essential because it helps dynamic communication between the teacher and the student, which makes the class much more enjoyable, he mentions that in addition to this, it allows apply active methodologies leaning on an interactive virtual platform where the student develops the basic competences required in this 21st century, this research was carried out in two phases: the first one was to evaluate the design and applicability of the blog and the second part was to evaluate the different points of view of the students, it was evident that they have a good concept of the tools offered by web 2.0.

Huz (2017), who described the creation of a blog as a complementary tool in the study of Probability Theory. Methodologically, it was a feasible project, based on field research and a documentary review. It is expected from what has been read in the researched academic documents that the use of this resource will make way for cooperative learning and will be a reason of great interest to the students. It is a proposal in development at the Experimental Pedagogical University of Macaray in Venezuela.

And finally Añasco (2018), elaborated an investigation in Ecuador whose objective was to determine the influence of the use of the blog in the subject of mathematics, a test was applied to know how the students were, the results achieved gave consent to the realization of a Comparison between traditional classes and classes with ICT use, the final reports decreed that the use of the blog has a significant influence on the students and achieves an important motivation in them.

## Materials and Methods

The observation method was applied to make the description of the events, the information collected was of utmost importance to better understand the terminologies and events that affected the problem (Evertson, 2008).

In general, it can be said that the research is descriptive with a qualitative approach. A bibliographic exploration has been done Focused on the use of ICT in the Mathematics subject and review of some blogs related to the subject, this served to see the options that the blog allows in the development of teaching units.

## Analysis and Discussion of the Results

The use of the blog is suggested to use its multimedia possibilities in the development of a didactic unit of Mathematics, it is desired that the students have a significant learning.

Taking into account previous experiences of various authors, for the development of the didactic unit of Mathematics it is suggested for the elaboration of the blog the Blogger tool of the Suite of Google for Education, in figure 1, the steps are shown basics to create a blog with Blogger.

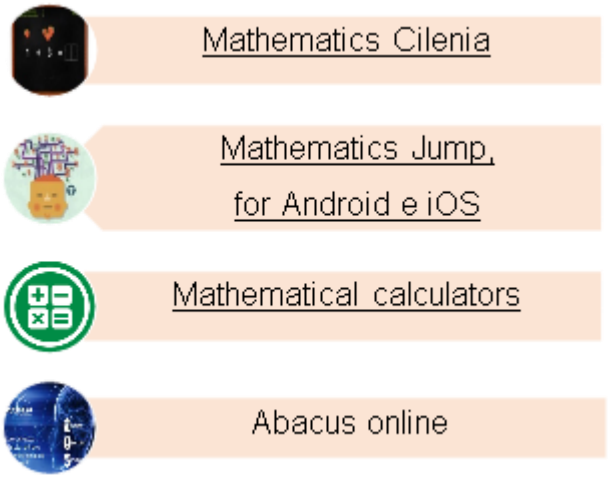


Figure 1. Basic steps to create a blog with Blogger.

Figure 2, shows the ICT support tools, which are posted on the blog for the subject of mathematics.

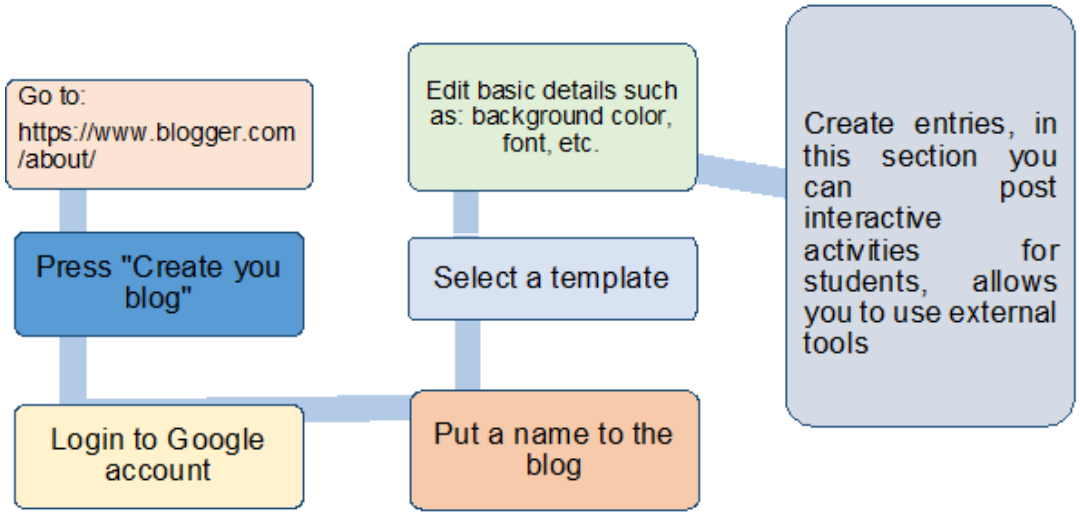


Figure 2. Support ICT tools.

*Didactic unit in the blog*

The blog is a class diary, where the new entries appear first, they are arranged in descending order, at the moment of expressing the mathematical didactic unit it allows great options to correctly specify the content. It is advisable to give the blog an appearance that is appropriate to the ages of the students.

*Type of communication in the blog*

The type of communication used in the blog is asynchronous, which is useful to give students the opportunity to review information on the Internet in order to give a more accurate comment on what

the teacher requests. The teacher can also have the blog as a flexible place for discussion, which helps students to express their opinion more easily. In this section the essential points found in the reviewed academic documents will be presented and described, the following categories could be registered:

*Student contributions:* it has been possible to detect that students have a high level of intervention when teachers use the blog as a resource ICT, in fact, there are young people who involve their families by showing them the resources that the blog provides.

*Stimulus:* The educational use of the blog undoubtedly allows a notable increase in the stimulation of the students, this is due to the interactive activities that can be hung, something new also, is that external ICT tools can be used to further enrich the classes.

*Desire for the classes:* It is an important reality the fact that when the correct use is made of ICT in this case, the blog, the students greatly want the next meeting to know with which activity the teacher will surprise.

*Responsibility:* it can be said that the students in their entirety have assumed the use of the blog with a lot of commitment, the documents reviewed attest to this, and their interest is remarkable since they were always very expectant for a next activity.

At a general level, it can be described that of all the documents reviewed, the students have welcomed the implementation of the blog in the mathematical subject, stating that it is preferable to use a blog than a physical book. Likewise, it is detected from the reviewed documents that in many cases the teaching strategy of applying the blog in the mathematical subject causes students to reflect on their own learning process, realizing that the motivation and approach of ICT have very good effect.

Also, it can be said that the production of student tasks with the use of the blog has been outstanding due to the creativity with which the activities are presented, in many cases the tasks exceed the expectations of the teachers. In this order of ideas, it should be highlighted in the same way that according to the documents reviewed, the use of the blog improves communication skills, and it is because the teacher can use this tool with the type of asynchronous communication (forums) where they can review and improve the terrain linguistic of its students.

The use of the blog in the subject of Mathematics is a good option for teachers to capture their didactic units, it is also recommended to use external ICT tools so that interactivity is more enjoyable, all this strategy promotes student autonomy, a point detected by the Most of the authors investigated. It should be noted that the simple event that a student manages to get involved in an interactive virtual platform that provides him with multimedia tools the same contents that the teacher explains in class instantly, allows a great advance to optimize the teaching-learning process and a excellent attempt by the teacher to personalize content for the students.

On the other hand, the classification of didactic digital content collected from the network, has a great backbone in the blog, just as the student could record notes on a blank sheet, now they can do it in this tool that offers an infinite variety of options due to its technological and interactive nature. In general, blogs, as well as different external ICT tools that have not been analyzed in this research, are an instrument at the mercy of educators, logically, to take into consideration, especially in this time of global crisis due to the Covid-19 virus.
It is almost obligatory to mention that the use of the blog as a platform on which a teaching unit can be supported is not only interesting and motivating for the student but also for the teacher, because thanks to technological resources they have the opportunity to break the Space and time barriers reaching more students worldwide.

The teacher must devote time to research, you cannot be a good teacher overnight, but you can go step by step to become a professor of excellence over time, keeping your students interested and motivated by the subject taught.
The activities that can be carried out in blogs are open to the student so that they can access at any time and place, giving way to ubiquitous learning, that is, that there can be teaching from any place or time, since the Internet is the basis or sustenance of blogs. Teachers must use this tool for being motivating, for allowing collaborative work, in addition to being innovative methodologies, in these moments of change, education professionals must immerse themselves in the overwhelming digital world and its use in current times with the global crisis caused by Covid-19.

## Conclusions

The contribution that ICTs make to education is unquestionable, however, the research that has been carried out sought to go beyond presenting a proposal and describing the current knowledge related to the use of the blog in the Mathematics subject, the intention was also to model a series of external ICT tools that can be of great help to provide multimedia content to students. The interactivity that the blog allows is very well received and teachers know it, the physical book has been left behind, now there are new ways of externalizing a didactic unit, the one that presents the greatest demand is the digital one, the blog is a great option to keep in mind. account since it allows hanging eye-catching activities and can also be used to improve communication skills.

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