Software libre: alternativa tecnológica en el proceso de enseñanza-aprendizaje

Free software: alternative technology in the teaching-learning process

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RESUMEN

El Software libre como apoyo a las actividades docentes es una alternativa válida para ofrecer a los alumnos de los diferentes niveles educativos un ambiente propicio para la apropiación del conocimiento, además permite evitar dependencia tecnológica, reducir costos por el pago de licencias, así como formar respeto a las normas sobre derechos de autor. El presente trabajo pretende contribuir en la reflexión sobre la adaptación y utilización de esta tecnología educativa en los distintos momentos del proceso de enseñanza-aprendizaje a través de las diferentes tipologías de software en el ámbito educativo, que permitan al docente desarrollar ideas innovadoras, metodologías y estrategias que logren en el alumno un aprendizaje significativo, creativo y colaborativo, para ser considerados alfabetizados digitalmente en la sociedad del conocimiento al transformar su entorno y mejorar su calidad de vida.

Palabras clave: alfabetización digital, creatividad, software libre, tecnología educativa.

ABSTRACT

The Free Software as a support to teaching activities is a valid alternative to provide a conducive environment for the appropriation of knowledge, students of different educational levels also allows prevent technological dependence, reduce costs for the payment of licenses, as well as to form respect for the rules on copyright. The present work aims to contribute to the reflection on the adaptation and use of this educational technology in the different moments of the teaching-learning process through the different types of software in the field of education, enabling

teachers to develop innovative ideas, methodologies and strategies that the student to achieve a meaningful, creative, and collaborative, learning to be considered literate digitally in the knowledge society to transform their environment and improve their quality of life.

Key Words: digital literacy, creativity, free software, educational technology.

Fecha recepción: Septiembre 2012 **Fecha aceptación:** Noviembre 2012

Introduction

Currently, the way to approach the process of teaching-learning in educational institutions has been fully influenced by the new technologies of Information and Communication Technology (ICT), becoming present in multiple scenarios. all with the purpose of seeking answers to the needs of an environment of intensive use of constantly growing ICT. This makes us think of a literacy proficient in skills, knowledge in the society of information and knowledge of this digital age allowing to raise awareness to develop attitudes and, as a result, improve the environment and quality of life of each individual.

Achieving a digital literacy that goes beyond the mere training in skills instrumental in fostering the development of autonomous, reflexive, critical and responsible, able to transform society, work with others to generate collective, shared knowledge and not just play back existing models, are challenges that education faces, and from which is derived the need to rethink goals, pedagogies and teaching, if it wants to fulfill its mission of providing satisfiers man needs in the 21st century. This paper focuses on the use of free software as an alternative to contribute in the teaching-learning process through strategies that you can implement the teacher, as well as tools and methodologies to deal with to contribute to the professional development of each student and include it in the digital age. At the end of the document are needed some points by way of conclusion.

Digital society

Prior to the advent of digital society, a person was considered literate while driving the process of literacy in their native language, that is, when I could read books and documents, understand and put on record their thoughts through writing. Today, digital literacy is a process of much wider culture, consisting of possessing the rudiments needed to move to new technologies. Especially on the Internet, you can access new content, interact with others and seize new opportunities through various digital media applications available to society. However, it is necessary to define generally the term digital literacy as the ability to understand and use the sources of information when presented through the computer, specifying that digital literacy has to do with the domain of ideas, not the (Gilster, 1997) keys.

Thus, in a complex and globalized world, literacy should be regarded as an essential life skill, and even as a survival skill, including all skill-based literacies, but not limited to any technology or particular, where understanding the meaning and context are central themes, with one goal: to promote the quality of life for all people, whatever their condition, sex, race, religion and origin (Travieso, 2008).

In this view, digital literacy is linked to education in general, where it is necessary to educate for multimedia, hypertext, media convergence and the different media. A true digital literacy must overcome the instrumental training. Ensure that understanding, it is to defend the right to a real freedom of expression and access to knowledge, because the computer code determines what is possible and expressed in information technology.

The translation of any message to the numerical language of computers, transformed the way we communicate, especially in the production of images, in writing, audio and video. We can say then, that in the creation of any content using a computer support a dual process of encoding / decoding occurs. From there, all digital teaching should pay more attention to rescue the educational potential of computer language learning; it should also give priority to the most critical and reflective content, to ensure access to knowledge and interpretation of information. Martin Gutiérrez said that literacy-understanding as purely instrumental learning-literacy can be done informally through daily use.

The information is essential for the construction of knowledge, however, the possession of information does not presuppose knowledge. Knowledge implies apprehending the information, process, relate and give meaning, applying it to the solution of new problems and situations.

Immersed in the knowledge society ICT creates a comprehensive overview of production, acquisition and transmission of knowledge, then knowledge is associated discuss the use of technology in education. In fact, in many cases, similar concepts are used as acquisition of information and knowledge construction (J. Salinas, 2006).

To Cabero, J., (2006) literacy should go beyond a mercantilist-working position to a more democratic approach; the first involves the formation of citizens only to the domain of hardware and software, among other reasons, because those who do not learn will be impaired to develop certain professional activities. And second, is training the subject not only as users, but also, and this is most important, as citizens.

Gutierrez (2012) mentions that although the child comes into contact with the media before going to school and acquire basic literacy casual, the main field of digital literacy should be formal, but no formal education centered inbred to enable the individual to pass some subjects and pass to the next grade, but an education from the school of life, a basic education that also takes into account both the skills already acquired and the informal literacy of students, and the educational potential ICT in the lives of children out of school.

For its part, Levis (2006) mentions that a true digital literacy is not just about teaching how to use the computer and the various applications, but also provide the basic elements for the development of capabilities to the understanding and mastery of language which they are encoded programs. The digitization is not to encounter different languages (musical, verbal, iconic, spatial, etc.), but in the coding of these and other languages in a unifying language of numerical nature. It indicates the need gradually to contemplate the inclusion of computer programming in the curricula, the same way that were incorporated (and removing) other areas of knowledge. Thus, after a few years he will get into a society that has a minimum linguistic and technical understanding of digital encoding systems.

The model of digital literacy report presented by the Digital (Digital Britain Media Literacy, 2009, quoted by Arrieta, 2011), which has the skills, competencies and opportunities should be developed: infrastructure, distribution of ICT and tools available in the same, constitute the essential elements to enable access and make way for its use; this generates skills and opportunities that develop the skills to access, navigate and use various types of tools. The use of various types of tools leads to skills to perform tasks simultaneously and using various formats are developed. However, use is not enough and that we must also achieve a critical understanding

through analysis, evaluation of its resources to safely interact and solve problems. Besides the above, it is essential to develop creativity which enables collective creation of knowledge, cognitive distribution and ownership of it. The sum of the above leads to digital literacy, which is characterized by developing a social conscience and identity, based on rights and duties that allow citizenship and build a digital culture.

Society creativity

Even knowledge itself is not enough. In today's world, rapidly changing, it is necessary to continuously provide creative solutions to unexpected problems. Success is based not only on what we know or how much you know, but rather in the ability to think and act creatively. In short, we are now living in the society of creativity.

The "creative thinking spiral" approach (Resnick, 2007, cited by Alvarez, C.) proposed that participants imagine what they want to do to create a project based on their ideas, play with their ideas and creations, share their ideas and creations with others and reflect on their experiences; above it leads to imagine new ideas and new projects. The coil generates an indefinite process of continuous improvement.

At first, this process should plan and lead the educator. However, as students internalize it, they learn to cross it independently to develop their own ideas, test them, challenge limits and boundaries, experimenting with alternatives, get feedback from others and generate new ideas based on their experiences (Resnick, 2007, cited by Alvarez, C.).

For the Spiral Creative Thinking work, educators must foster an environment in which it is allowed to imagine, transform, idealize, deconstruct and restructure. An environment where they can communicate, where there is tolerance for spontaneous reactions (Lopez, 2000, cited by Alvarez, C.). Educators should foster an environment of trust, which is the most important number of alternative solutions that generate a student who answers correct the problem. Therefore, should be avoided at all costs issuing negative value judgments against any alternative, it may seem illogical.

Additionally, in the different phases of the spiral, you should take every opportunity to raise unexpected problems and to ask students to formulate alternative solutions to every problem or situation that arises. In this sense, the practice indicates that students repeatedly raised their educators situations they want to develop their projects. Such unexpected situations become

educators should solve problems. These situations can take advantage of educators to raise them to the whole class as unexpected problems.

The student to learn builds internal representations of knowledge known as mental models. They show us a way of knowing the world where everyone formed a personal picture to explain a phenomenon or concept. Every student in this action puts an aggregate according to their own experiences and understanding of the learning process.

To represent this knowledge can use the technique of concept mapping, allowing the student to acquire their first concepts and language, or receptive learning, it requires the individual to relate, to play with the concepts to be drenched with the content . It is not a simple memorization; you should pay attention to the relationship between the concepts. It is an active process that allows meaningful learning.

Free software and educational technology

Throughout history, man has identified the value of knowledge and information; also has noticed that although there is information that the vast majority of people do not have the ability to access this, unless you have the financial resources to do so, thus creating discrimination on the information. Information and knowledge are not only essential for developing societies, but also an entitlement. Libraries appear and the concept of public education appears to reduce this discrimination, but still discrimination on access to information continues to operate; For this reason, the philosophy of free software plays an important role in multiple disciplines, emphasizing education as only they stimulating cooperation and free access to knowledge visible improvements (Alarcón, A. Sandoval, E., 2012) will be achieved .

Educational technologies involving a challenge to the education system, which is still being a one-way training model where knowledge usually fall on the teacher or his replacement, the textbook, to become more open models flexible, mediated by ICT. These technologies refer to two issues in itself heterogeneous, multivariate and multiple meanings: on the one hand, related with technology and its impact on the socio-economic, cultural and political, and on the other, that has to do with education and that involves aspects of theoretical, methodological, curriculum planning and nature, among others. This is particularly oriented technology mediate the educational process, considering, to be relevant, the cultural and historical context in which they are launched. But also its application entails taking into account the stages of design,

implementation, evaluation and research associated with both conventional contexts (face to face) as virtual learning environments (Chavarría, J., 2005).

Why use free software

The Free Software Foundation (FSF) defines free software as users' freedom to run, copy, distribute, study, change the software and eventually distribute it. Software freedom plays a particularly important role in education by promoting education and dissemination based on the freedom to research, create, modify and learn knowledge. Richard Stallman, father of GNU movement and founder of the FSF, has the following reasons, as amended by Roman Gelbort:[1]

I. Moral reason: Education is much more than teach a subject (reductionist way to not take care of the consequences), involves the formation of the student.

II. Educational reason: If we want students to learn about a type of software or software, we present challenges such as "investigate her womb." That can not be done if you only let us teach them to push buttons, a greater commitment is required.

III. Libertarian Reason: There is no better way to teach the virtues of living in freedom than exercise. If my students have to suffer that free software is not as developed as proprietary counterpart, they will suffer for their poor development or learn how to enter the development community and see how the program becomes efficient thanks to them. Is the difference between freedom and licentiousness ... one takes into account the responsibility and the other not.

IV. Economic reason: This is the least important of all the reasons ... but the view before understanding the free software. A free operating system like Linux, it is much cheaper than its proprietary counterpart. Not because licenses are paid, but because we have to

1 Adapted by Roman Gelbort president Gleducar: http://www.gleducar.org.ar/

spend our lives fixing it to keep it running.

The OSI (Open Source Initiative), led by Eric Raymond, Tim O'Reilly, Bruce Perens and developers as Linus Torvalds defend the open code for pragmatic reasons: higher quality, lower cost, greater security, stability, efficiency, integration.

From an educational standpoint, we have the following reasons (Adell, J. and Barnabas, L., p. 17-19).

I. The first is that free software can be copied and redistributed at cost. The education authority can provide software to all schools at a very low price and spend the resources saved to other items needed for education: more computers, teacher training, development of free educational software, and so on. In less developed countries, free software can help provide technological infrastructure to their schools and to alleviate the "digital divide" with the developed world.

II. The school is to teach students the values and lifestyles that benefit all of society. The school must promote the use of free software for the same reason that promotes recycling: because it benefits us all. If students use the free software and learn that it is better than proprietary, as adults continue using free software. This will allow society free of abuse and control of multinationals who control proprietary software.

III. Free software helps students learn how computers work and the software itself. Future programmers start programming during adolescence. It is a key stage where they need good role models and examples to modify, copy, and "play" with them. They need challenges. Free software, by allowing access to the source code of the program, greatly facilitates learning. Proprietary software is a "black box" that does nothing to satisfy their curiosity and thirst for knowledge. It sends the message that proprietary software is "knowledge is a commodity, you want to know is a trade secret, learning is forbidden by law". Proprietary software keeps people away from knowledge, technology and contributes sacralizes interesadamente technological ignorance as good economic performance provides companies that commercialize.

IV. But while many adolescents are curious about how they are made computer programs, there are general values pursued education who are in clear conflict with the message

conveyed proprietary software. Schools should teach facts, concepts, principles and procedures, but also values. The school mission is to teach people to be good citizens, to cooperate with others, to be supportive. This is the basis of society. In computing, cooperate means, among other things, sharing software, you can back to all classmates, taking home the software used at school. And all this with proprietary software is a crime.

V. Finally, teach students to use free software and participate in the community of users / developers of free software is a civics lesson into practice. It also teaches students that the ideal is the model of public service and solidarity, not the model of profit at any price tycoons. All levels can and should use free software (Stallman, 2003).

Amatriain (. 2004, p.5 quoted by Adell, J. and Barnabas) perfectly summarizes the coincidence of values of free software and education: "the values that an educational institution should promote are closely related to those that promotes free software : freedom of thought and expression, equal opportunities, effort and collective benefit rather than individual benefit and so on. In fact, freedom may be the most important value related to education: education without freedom becomes indoctrination. "

Free software types

Currently there are hundreds of software applications available to business, education and home use. The interesting thing is to select the right software to effectively and efficiently meet the needs of the student. The best way to learn to use them is to try and share with colleagues and friends their findings free software; free software is for, to share and collaborate.

OpenOffice.org office suite has become a game of quality applications similar to those of any other office product functionality, and what is more important, "talks" very well with the data formats of MS Office. These features have made it the reference implementation of free software in the world of office. The importance of OpenOffice.org, from the point of view of free software extension to a large number of users, is enormous. (Barahona, 2003, quoted by Gimeno, Medina and Carletto, 2007).

In distance education, daily accumulation of free applications increases, mainly managers or managers online learning courses with characteristics that make them competitive with commercial systems. Avello mentioned that there are free alternatives in the process of distance

learning from a range of possibilities for each phase of development, as shown below:

— Preparation phase of materials: E-learning Editor XHTML (XHTML Editor) and NVU (FTP), Bluefish, Quanta, among others. In office he has the OpenOffice suite and recording multimedia content K3b.

— Ongoing Phase mounting and accessories: Moodle (online learning manager System) for content management are Drupal, Joomla and Plone systems. Each is ideal for the creation of thematic communities, intranets, collecting and publishing content, to the exchange through comments and forums, image galleries, Blogs, Wikis, good management of users, manageability, and so on. Other useful tools to supplement distance learning courses and blended with characteristics of information retrieval and easy administration are available in Igloo, Greenstone, Openbiblio, OWL.

— Implementation phase of the course: Mozilla Firefox (web browser platform), Mozilla Thunderbird (email client).

Among the wide range of free applications that can be useful to meet the different needs of students, shows some in the figure below.

Tipo:	Aplicación libre:	Puede descargarse en:
Navegación Web	Mozilla Firefox	http://www.mozilla.org/products/firefox/
Mensajería instantánea	Gaim	http://gaim.sourceforge.net/downloads.php
Correo electrónico	Mozilla Thunderbird	http://www.mozilla.org/products/thunderbird/
Agregador RSS	RSSOwl	http://www.rssowl.org/download
Internet TV / Video Podcasting	Democracy Player	http://www.getdemocracy.com/
Compartir ficheros P2P	Azureus	http://azureus.sourceforge.net/download.php
Video players	VLC MPlayer	http://www.videolan.org/vlc/ http://www.mplayerhq.hu/design7/dload.html
Conversión video Creación DVD	Media Coder	http://mediacoder.sourceforge.net/download.htm
Ofimática (suite completa) Edición de textos	OpenOffice.org AbiWord	http://www.openoffice.org/ http://www.abisource.com/download/
Podcasting	Juice	http://juicereceiver.sourceforge.net/index.php
DVD Ripping	Handbrake	http://handbrake.m0k.org/download.php
Sonido	Audacit	http://audacity.sourceforge.net/download/windows
Gráficos	GIMPShot Paint.net Inkscape	http://www.gimpshop.net/ http://www.getpaint.net/download.html http://www.inkscape.org/download.php
Transferencia de ficheros	Filezilla	http://sourceforge.net/project/showfiles.php?group_id=21558
IRC	X-Chat 2	http://silverex.info/download/
Gráficos 3D y modelado	Blender Jahshaka	http://www.blender3d.org/cms/Blender.31.0.html http://www.jahshaka.org/component/option,com_docman/task,cat_view/gid,16/Itemid,49/
Astronomía	Celestia	http://www.shatters.net/celestia/download.html
Antivirus	ClaimWin	http://www.clamwin.com/
Actividades didácticas	JClic	http://clic.xtec.net/es/jclic/
Mapas conceptuales	CmapTools	http://cmap.ihmc.us/
Editor de páginas Web	NVU	http://www.nvu.com/download.php
Editor de paquetes SCORM e IMS Learning Desig	Reload	http://www.reload.ac.uk/tools.html
Recopilaciones de software libre (y alguno gratuito pero no libre) para Windows	CDLibre Paraisoft Alternativas libres WinSLow	http://www.cdlibre.org/ http://www.paraisoft.com/ http://alts.homelinux.net/ http://winslow.aditel.org/
Aplicaciones instalables en una memorias Flash USB (para llevar)	Framakey Portable USB Software: A Melange	http://www.framakey.org/ http://meprisant2.blogspot.com/2006/01/portable-usb-sofftware-melange.html

Figure 1. Free software tools. Taken from Adell, J., and Barnabas, Y. (2007) .Software free education. Cabero, J. (2007) (ed) Educational Technology. McGraw Hill. Madrid.

Skills, models and methodologies

Students should acquire skills to develop positively. Some of the macrocompetencias to be taught, even at the risk of oversimplifying, the following should be considered:

- Related to the educational scenario, competencies to manage knowledge and learning: to be a lifelong learner.

- With respect to professional and labor scenario, competitions for access to employment and to occupation: to be an effective professional.

- For the community setting, skills for coexistence and interpersonal relationships: being a participatory and supportive citizens.

- In connection with staff stage skills for self-esteem and personal settings: be a happy person.

However, the traditional skills basic skills (reading, writing, math) skills "foundational" (learning to learn), communication skills (learning to listen and develop oral communication), adaptability (acquire creative thinking and ability to solve problems), group effectiveness (interpersonal skills, negotiation, teamwork), influence (effective self-organization and leadership), self-management personnel (self-esteem and setting goals and motivations), attitude (positive cognitive attitude) and applied skills (occupational and vocational skills), one can speak of a new skills for successful integration of people into society. (Wagner, 2005, cited by Alvarez):

— Computer literacy skills as hunting, logging, processing, aggregation, labeling filter (Competencies of Web 2.0).

— Social skills for the third environment and socialization, channel management, construction elements traccionadores reputation and attention.

— Skills for living and producing network, establish and maintain relationships, groups,

contacts, productions and experiences.

— Skills to handle the unexpected, the chaos, the capacity for reinvention and refocus.

— Building skills such as imagination, abstraction, formulation of alternatives, proposal and implementation of designs.

On the other hand, have done work like that presents Maria Valeria de Castro of the Rey Juan Carlos University, based on a model of development of free software (according to eight conclusions from Eric Raymond in his book The Cathedral and the Bazaar, cited by Alvarez) which can be applied to the educational model. The author reveals different ideas they can bring to the educational models within learning processes with new technologies:

I. Every good work of software starts "scratching a developer's staff itch": Using the problem-based learning.
II. Good programmers know what to write. Great ones know what to rewrite (and reuse what): Work from texts, works through drafts.
III. If you have the right attitude, you will find interesting problems: Encourage risk taking, curiosity, invention.
IV. When you lose interest in a program, your duty is to find a competent successor: Project management and mentoring new participants.
V. Consider users as co-developers is the least problematic to improve the code and debug efficiently route: test users.
VI. Early release. Frequent release. And listen to your customers: From the draft to the final product.
VII. The best thing to consider for having good ideas is recognizing good ideas from your users: Collaborative development.
VIII. The most striking and innovative solutions come from realizing that the concept we have of the problems is wrong: Leveraging and building failures.

Model of digital literacy

The first element or pillar of this model literacy refers to what it is you need to know to make a literate subject regarding the use of Web 2.0 (Moreira, M. Gutierrez, A. and F. Vidal, 2012).

Literacy levels to new digital cultural forms

- Learning to use Web 2.0 as a universal library.
- Learning to use Web 2.0 as a service market.
- Learning to use Web 2.0 as a crossword microcontent intertwined.
- Learning to use Web 2.0 as a public space for communication in social networks.
- Learning to use Web 2.0 as a space for multimedia and audiovisual expression.
- Learning to use Web 2.0 as a territory of interactive virtual experiences.

The second element or pillar of this theoretical model of literacy refers to the identification of the competence dimensions of learning the subject. Thus, the comprehensive and globalizing educational model for literacy in the use of information and communications technology requires the development of five areas or competence dimensions that develop simultaneously in the learner (Moreira, 2012, p. 30).

— Instrumental dimension: on the technical mastery of each technology and its logical methods of use. Ie acquire practical knowledge and skills to use hardware (mount, install and use the various peripherals and devices) and software or software (either the operating system, applications, Internet navigation, communication , etc.).

— Cognitive-intellectual dimension: relative to the acquisition of knowledge and specific cognitive skills that enable search, select, analyze, interpret and recreate the enormous amount of information that is accessible through new technologies, as well as communicate with other People using digital resources. That is, learn to use wisely the information to access it, give it meaning, analyze critically and personally rebuild.

— Sociocommunicational Dimension: on the development of a set of activities related to

the creation of texts of various kinds (hypertext, audiovisual, iconic, three dimensional, etc.) skills, disseminate through various languages and to establish fluid communications with other subjects through technologies. It also involves acquiring and developing standards of behavior that imply a positive social attitude toward others, such as collaborative work, respect and empathy in social networks.

— Axiological dimension: on the awareness that information and communications technology are not aseptic or neutral from a social point of view, but a significant impact on the cultural and political environment of our society. It is also related to the acquisition of ethical and democratic values in the use of information and technology, preventing socially negative communication behaviors.

— Emotional dimension: on the set of emotions, feelings and emotional impulses caused by experience in digital environments. These take place along with the actions developed in virtual environments (such as video games) or with interpersonal communication in social networks. Literacy of this dimension has to do with learning to control negative emotions, developing empathy and building a digital identity characterized by personal emotional balance in the use of ICT.

Methodologies of cooperative and collaborative learning

They are two similar methodologies in form, that is, both work with groups of students which is expected to result learning. However, cooperative learning seeks to develop socio-affective skills, students should help each other, and thus achieve the objectives, if one goes all go. It is noteworthy that this methodology is useful when conditions have features like: students with learning disabilities, with discipline, different characters, and so on. In most classrooms where there are heterogeneous groups, they can lead to complications, however, cooperative learning can be a solution for teachers who intend to bring up all students.

Collaborative learning is a methodology that requires preparation of the students who make up the groups, the fact that the structure is quite open requires responsibility, maturity, creativity, etc., conditions found in students in higher courses or very well trained. Remember that the teacher gives instructions and learners take charge of their own learning. This is a methodology

for those teachers seeking to develop personal and social skills. Each student is a contribution to the common good, but there is an atmosphere of support and cooperative learning, which is the clearest difference between the two methodologies.

To work collaboratively is necessary to share experience and knowledge and have a clear target group in which the feedback is essential for success. "What must be learned can only be achieved if the group's work is done in collaboration. This is the group that decides how to perform the task, what procedures to adopt, how to divide the work, tasks.

This set of instructional methods and training are based on technology and strategies to develop in students personal and social skills, making each member of the group feels responsible not only for learning, but that of the other members of group (Lucero, 2003).

Methodology treasure hunting

It is a proposal for students in addition to seeking information, analyze and understand, proposed in the work of Jordi Adell (2003), Professor of Education at the Universitat Jaume I, his work "Internet in the Classroom: A hunting treasure "is something as simple as a spreadsheet or a website with a series of questions and a list of Internet addresses where students have to look for answers. At the end you must include the "big question", whose answer does not appear directly in the web pages visited, which requires integrating and assessing what was learned during the search. Treasure hunts are useful to acquire information about a particular topic and practice skills and procedures related to ICT and access to information through Internet strategies. Among other things, allow us to improve reading comprehension of students and teach them to search the Internet. The could place on a level below the WebQuests tend not to propose students the resolution of any problem or exposure conclusions.

In conclusion

The technology is advancing by leaps and bounds, changes that can be observed are very large; technology has come to occupy an important place in the development of both our professional lives as labor, hence the importance of adequate technological literacy, as this comes to place the student in a situation where you are taught and contextualized with respect to technology, giving an opportunity to develop skills and technological knowledge, knowledge of software and hardware to avoid the technological gap.

The free software allows teachers to work in innovative ways in the teaching to make this a powerful tool through the various existing typologies to be applied in all formal and informal educational levels, in person and / or remotely. The teacher should employ and choose teaching and learning strategies to support the pedagogical models that focus on learning with new technologies, multimedia resources avail various free software currently available, which enable the development of general intellectual skills, such as observation, comparison, classification and valuation, as reflected by the increase in the processes of analysis, synthesis, abstraction and the student achieve significant learning and values when freedom of this software are encouraged.

By encouraging the speaking and speaking in the classroom and, of course, critical (starting own), flexibility, construction of thought (whether owned or collective), and connecting ideas, then surely the student does not will think of nothing other than express their view or their own learning.

The gain access to sources of information does not imply learning, although this is a precondition for the individual at the time when the information becomes knowledge condition. This is where you should use the methodology of creative knowledge (essential for everyone in this era called knowledge society). Nowadays, a literate student must "learn to learn" and "know-how" all his life, deal with information in a useful and intelligent way, professionally qualify in the use of ICT and awareness of the economic, ideological, political and cultural that technology brings.

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