

WIKIPEDIA on education





Prof. Fernando da Rosa

Professor and researcher, with a long career in communication and ICT, he carried out a special investigation on child pornography on the Internet, which led to legislative amendments in several countries.

He has been Prof. Adj. In Communication Sciences at the University of the Republic for almost 30 years, since it was a dependency of the CDC assimilated to School, and was not part of, as it is now, the Faculty of Information and Communication and Librarianship.

Teacher for seven years at ORT University, in charge, among others, of the subject "Internet Programming".

Teacher of the CLAEH in a graduate program for Librarians that lasted two years.

He has also been a CFE teacher in the postgraduate proposals of the IPES. Recently he has been in charge of a module on "Business Models based on Free Software" in the graduate program "INFORMATION SYSTEMS OF ORGANIZATIONS AND MANAGEMENT OF THE COMPANIES' IT" intended for engineers in computer science and economists, undertaken by the Faculty of Economic Sciences and Administration of the University of the Republic. From his pilot program in CARDAL he has supported, from the University, Plan CEIBAL, also working on it.

Currently, and since 2012, he has led the "Wikipedia in Education" project, currently working with six teachers, several of whom are among the authors of this book, while others started working on the project this year.



Wikipedia on education

ISBN : 978-9974-36-400-4

The authors wish to dedicate this book to Ing. Miguel Brechner: without his intervention there wouldn't be as much understanding in Uruguay of the possibilities offered by computers in education.



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Introduction

This book is the product of the work undertaken in the *Wikipedia in Education* Project. The authors wish to especially thank the Consejo de Educación Secundaria (Secondary Education Council, CES), the Ministerio de Educación y Cultura (Ministry of Education and Culture, MEC) and the Plan CEIBAL for all the help and support provided.

We'd also like to thank Bruno C for the translations; Ricardo López (Sanopi) for the illustrations; Ana Sosa Cedrani for the Copy/Editing, and to Rodrigo López for the page layout. It's important to mention that this book is being published in Spanish and in English with the same license used by Wikipedia, meaning sharing and editing is welcome.

Proff. Fernando da Rosa

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The advantage of using computers in the classroom

by **Fernando da Rosa**

In 1997 the *Deep Blue* computer won a chess match against then world champion Garry Kasparov. Bit about that event in Entrebytes: <http://viyoutube.com/video/aXap0jBoASc/entrebytes>

The first article on the topic of Computer vs. Human was written by Claude Shannon in 1950. Regarding artificial intelligence, he argued that there were two types of programs, type "A" and "B", with type "A" programs using "brute force", a very difficult task at that time because of the many thousands of moves to compute. The type "B" programs were to use some sort of "strategic artificial intelligence" that would select the moves and thus the positions to be analyzed.

Claude Shannon suggested what is now known as the Shannon number, which points that there are more possible moves in chess than there are atoms in the universe. Then, in the early 2000s, programs like *Fritz* were able to do

capably well even against world champion Garry Kasparov. Of course, chess is a "zero-sum, deterministic, finite, and of complete information" game, which implies that the human player is competing with a calculator. It makes little sense, calculators are meant to be used, not be competed with. Partly because of that, in 1988 a movement called *Centaur* chess was created, pairing chess players who combined their intelligence with that of a computer, the computer-man arrangement against just computer being a winner combination.

Chess was remodeled, the best *Centaur* chess team almost always winning, the computer-man bond. It also brought with it an amazing number of new moves.

When the relationship between man and computer is analyzed the emphasis is mostly centered on their rivalry, for example, what's happening with job positions today, and not thinking about collaboration, considering man has things to offer that the machine completely lacks, at least for now, like imagination, intuition, etc. The combination in which man makes use of the machine is always the winner. Teaching

children how to interact with computers prepares them for the future.

Collaboration between humans and computers has a name, Intelligence Amplification or Robust Intelligence. Human beings in the loop can choose paths when there are large variations, can use their intuition, imagination, etc. Whenever a new technology arises, one thinks about its dire consequences and not on their possible good consequences, Socrates thought writing would put an end to memory -see Plato's dialogue "*Phaedrus*" for more- of course, that never came true. At the time of the Industrial Revolution, 50% of humanity was engaged in food production, while today's it's a mere 5%. The issue is how to wisely handle periods of change.

No one ever thought that a computer would never win against a *Go* world champion, the board having a greater number of cells than chess, and also, the chips are introduced to the board, they don't have a starting position, they are out of the game until used. In March of 2016, *AlphaGo* (a subsidiary of *Alphabet*, *DeepMind*) faced Korean Lee Sedol

(considered the best *Go* player at the moment) and won, four out of five engagements.

But the most interesting thing is that *AlphaGo* "learned" the game playing against itself. And the way it "learned" could be used to help machines in predicting the weather, working in medicine, etc.

So much so, that in the near future, many jobs could be performed by computers, but as stated before, man-computer is always the winning combination.

This gives us a great advantage as a country and on the region. Thanks to the CEIBAL Plan, children and adolescents are being prepared for the world that is yet to come.

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Wikipedia

by Proff. Fernando da Rosa

Jimmy Wales created Nupedia in March of 2000, an online encyclopedia and direct predecessor of Wikipedia, which began operating on January 15, 2001 (Martínez, 2012). The oldest article is called *UuU*, in English, and the first and largest version of Wikipedia, dates from January 16, 2001 and included three links to the United Kingdom, the United States and Uruguay (Wikipedia, 2018). (Lih, 2009). Wikipedia is managed by the Wikimedia Foundation, a non-profit organization with donation-based funding. (Saorín, 2012)

The Board of Directors of Wikimedia handles the Foundation and oversees the arrangement and request of donations. The Board is the highest authority of the Wikimedia Foundation (Article IV, section 1 of the Statutes of the Wikimedia Foundation) and consists of a founding member (a position reserved for Jimmy Wales), two members elected by the Wikimedia Chapters and thematic organizations, three members elected directly by the Wikipedia community, as well as four experts elected by the rest of the members of the Council. At present, November 2018, it has eight members:

Composition of the Board of Directors

Name	Current Position	Nationality	Starting date	Photograph
María Sefidari	President	Madrid, Spain	July 2018	
Christophe Henner	Vice President	Lavaur, France	July 2018	
Jimmy Wales	Member and founder	Alabama, United States	June 2003	
Dariusz Jemielniak	Member	Warsaw, Poland	July 2015	

Esra'a Al Shafei	Member	Bahrain, Bahrain	July 2018	
James Heilman	Member	Saskatchewan, Canada	July 2018	
Nataliia Tymkiv	Member	Kiev, Ukraine	August 2016	
Raju Narisetti	Member	Hyderabad Desam, India	July 2018	
Tanya Capuano	Member	San José, United States	July 2018	

(Wikimedia Foundation, 2018)

Wikipedia Foundation Vision

The Vision Statement of the Wikimedia Foundation describes the dreams, hopes and ambitions of its members; it's the most radical concept of the organization and the community: 20, 50 and 100 years from now. The current version of the Wikimedia Foundation Vision is as follows:

Imagine a world in which every human being can freely share the sum of all knowledge. That is our commitment. (Vision-Goal, 2007)

Wikipedia comprises more than 46 million articles in 288 languages, all written by volunteers from around the world who publish an encyclopedia accessible to all. It also self-regulates with volunteers. The pages or articles can, in some cases, be protected by librarians (also chosen by the community) to avoid “vandalism”.

In the beginning there was a wiki to work on the preparation of an article prior to its publication in Nupedia, overseen mainly by Jimmy Wales and Larry Sanger. Subsequently, it was disclosed that the wiki produced more articles, and at increasing rate, so Jimmy Wales, from that reality and necessity, created Wikipedia.

Of the different language variations, there are thirteen that surpass the million articles, the versions are: English,

Cebuano, Swedish, German, French, Dutch, Russian, Italian, Spanish, Polish, Waray, Vietnamese and Japanese.

There are several ways to call Wikipedia. In English the name has been inherited, but there are other spellings (Wikipedia, 2018):

Biquipedia - Aragonese.

Güiquipeya - Extremaduran.

Uichipedia - Aromanian.

Uiquipedia - Asturian.

Vicipaedia - Latin.

Vicipéid - Irish.

Vikipedi - Turkish.

Vikipetã - Guaraní.

Wicipedia - Welsh.

Վիքիպեդիա - Armenian.

ايدىبىيكيو - Arabic.

ウィキペディア - Japanese.

Wéijībǎikē / 维基百科 - Chinese.

Википедия - Russian.

הידפיקיו - Hebrew.

On the other hand, Wikipedia exists in many languages. The main ones are the following:

Post	Edition	Articles	Post	Edition	Articles
1	English	5,611,843 articles	2	Cebuano	5,382,929 articles
3	Swedish	3,784,054 articles	4	German	2,172,061 articles
5	French	1,974,279 articles	6	Dutch	1,928,675 articles
7	Russian	1,466,265 articles	8	Italian	1,430,422 articles
9	Spanish	1,403,370 articles	10	Polish	1,274,714 articles
11	Waray	1,262,915 articles	12	Vietnamese	1,170,322 articles
13	Japanese	1,102,706 articles	14	Portuguese	997,258 artículos
15	Chinese	999,953 articles	16	Ukrainian	780,754 articles

In many cases, like in the Swedish, Dutch and Russian editions, automatic programs called *bots* are used to create articles. This decreases the quality of articles and is not an accepted practice for the Wikipedia in Spanish or some other languages. The previous data corresponds to April 2018. There are also very critical views about Wikipedia (Gourdain,

O Kelly, Roman-Amat, Soulas, & von Droste zu Hulshoff, 2007), but we believe that time has proved them wrong. On the other hand, very in-depth books have been published on how to edit Wikipedia and work with all of its capabilities (Ayers, Matthews, & Ytes, 2008).

Project

The “Wikipedia in Education” project (da Rosa, 2012) had on its first iteration the participation of five teachers: Melody García, Maycol Pérez, Roxana Sordo and Mercedes Villalba, as well as Fernando da Rosa, who played the role of director for the project for the CEIBAL plan, and was at that time an adjunct professor of Communication Sciences at the University of the Republic. The project was carried out in the IFD (Teacher Training Institutes) and the CERP (Regional Centers for Teachers), and began in earnest on December 23, 2012, with the conferences at LATU of Ángeles Soletic and Fernando da Rosa. They can be found on *YouTube* as *Fernando da Rosa y Wikipedia*. The LATU conference is subtitled in English. (Fernando da Rosa Presentation - “Wikipedia in Education” - *YouTube*, 2012) (Angels Soletic Presentation- “Wikipedia in Education” project - *YouTube*, 2012)

The objectives were:

General Objective

Create spaces for the appropriation of technology during teacher training to stimulate the use of Wikipedia in teaching and learning processes.

Specific objectives

1. Get teachers from the Education Training Council involved in a process of critical reflection on the use of Wikipedia in education in order to consider and embrace its possibilities.
2. Contribute theoretical, methodological and technical elements to encourage the development of skills in the use of Wikipedia, establishing a teaching team to work on these issues.
3. Encourage the use of Wikipedia in teaching and learning processes through its use, its critical reading and editing, building collaborative workspaces using wiki technology.

This stage ended with an evaluation meeting at the IPA on December 9, 2014. A final conference was held, and can also be found on *YouTube*.

Results of the first stage

- 940 new articles created in the Spanish Wikipedia.
- A total of 192 participants contributed 2100 images to Wikimedia Commons.



- The contribution to Wikipedia is approximately equivalent to 1400 pages, at 2 Kb per page.
- The material created has not been deleted, more than 82% still stands today.

At the beginning of the project Uruguay had 246 registered Wikipedians. This figure rose to 1420, which means that all of them have created a page in Wikipedia. They know how to do it, but it doesn't mean that everyone has kept the role of editor, although in many cases it has been that way.

At the moment Uruguay is the country with the highest representation of wikipedians per capita for Spanish Wikipedia in the world. Being registered does not mean being a good editor or editing a lot, but, as the saying goes, 'Dripping water hollows out stone, not through force but through persistence', the intention is to keep



on training editors that create and edit a lot of quality content. (Annex 2)

The second stage of the project began on September 8, 2017 with a conference by Magister Natalia Correa in the Executive Tower. Previously, the teachers participating in the project were trained in the use of Wikipedia and given some talks on the subject.

Second stage

The teachers participating in the second stage were Alejandra González, Lucía González, Ernesto Macazaga, Leticia Marcoff, Betina Sobrado and Fernando da Rosa. Two more teachers have recently joined the project: Selene Aguiar and María de los Ángeles Vázquez.

This stage has the following objectives (da Rosa, 2017):

General Objective

Create spaces for the appropriation of technology by teachers currently engaged in Language and secondary education, share strategies for stimulating the use of Wikipedia in teaching and learning processes.

Specific objectives

- Get teachers from the Secondary Education Council (CES) involved in a process of critical reflection on the use of Wikipedia in education in order to consider and embrace its possibilities.
- Create a group of language teachers (with backgrounds in the Spanish language, Literature, English, Italian, French, and Portuguese) to collaborate and contribute theoretical, methodological and technical elements that encourage the development of skills in the use of Wikipedia.
- Promote the use of Wikipedia in teaching and learning processes through its use, critical reading and editing of articles, creating collaborative workspaces using wiki technology.

Other Wikipedias

The multiple languages of the different Wikipedia versions, among other aspects, have made it the most looked up encyclopedia worldwide (Delsaut, 2018).

The case of China is unique because two online encyclopedias have appeared after the birth of Wikipedia: *Baibe* is the largest Chinese encyclopedia with a total of 14 million articles, it works as a wiki and is connected to a social network. The other one is the so-called *Baidu Baibe*.

In France *Wikipédia* is larger and receives more queries than the *Larousse* and the *Encyclopaedia Universalis*.

Russia has the *Wikiznanie*, which competes with Wikipedia but has fewer articles, about ten times less. (Delsaut, 2018)

Regardless, Wikipedia does not see other encyclopedias as a competition, but as a reference.

The current beneficiaries of the project in this second stage are students and teachers of the CES (Secondary Education Council), belonging to 42 locations in six regions of the country. (*Editaton Wikipedia* in Antel - *YouTube*, nd)

In this stage, lasting two years, activities have been carried out in the following institutions:



Highschool N° 1 of Treinta y Tres
Highschool N° 2 of Treinta y Tres
Departmental Highschool of Minas
Highschool of La Floresta
Highschool of Parque del Plata
Highschool No. 2 of Pando
CeRP (Regional Teachers Center) of the South
Departmental Highschool of Tacuarembó
Highschool No. 7 of Rivera
Highschool of Tupambaé (Cerro Largo)
CeRP (Regional Teachers Center) of the North (Rivera)



Highschool N° 1 of Colonia del Sacramento
Highschool N° 1 of Fray Bentos
Highschool N° 1 of Florida
Highschool N° 1 of San José
Departmental Highschool of Maldonado
Highschool N° 4 of Maldonado
Workshop with Courses Inspectors
IFD San José
«Cátedra Alicia Goyena» (Alicia Goyena Hall)
«Casa Giró» (Giró House)

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Lih, A. (2009) *The Wikipedia Revolution* (Vol. 1). Hyperion

Martínez, C. (2012). *Wikipedia, inteligencia colectiva en la red* (Wikipedia, collective web intelligence) (Vols 1-1). Barcelona: Profit Editorial.

Saorín, T. (2012). *Wikipedia de la A a la W* (Wikipedia from A to W) (First Edition in Spanish, July 2012, Volumes 1-1). Barcelona: UOC.

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A large, stylized blue letter 'W' is positioned on the left side of the page, partially overlapping the title. The 'W' is composed of several overlapping, semi-transparent blue shapes, creating a layered effect. The background of the entire page is a solid blue color.

Educational use of Wikipedia

by Proff. Betina Sobrado

Wikipedia is now in the classrooms. Students use it to find information because of its quick and easy access. The breadth of topics covered facilitates tasks for retrieving information. But, Wikipedia can be much more than this, it can become a teacher's tool in the learning process.

The presence of technology in the classroom is perceived by teachers both positively and negatively. The constant use of cellphones by students, sometimes almost as an extension of themselves, is problematic. In others, it is incorporated naturally as a work tool, for example, using it to take notes, to perform a *Google* search for quick answer, or as a help memory during an oral presentation.

The use of technological devices is part of the educational activities at all levels of formal education. Projections, oral presentations supported by slides, written works in word processors, search of information on the web, use of resources in different formats, educational videos and playful applications are used. Learning platforms such as

CREA, EVA and CEIBAL are present at all formal education levels, both in public and private education.

The growth of the Plan Ceibal has meant that almost all students in public institutions have computers, just as well, all schools have network connectivity.

The evolution of learning processes necessarily occurs as a result of an accelerated technological development (Ricaurte-Quijano and Carli Álvarez, 2016). The challenge lies in the teachers being able to guide these changes by updating their educational practices.

In essence, Wikipedia can help create innovations in the classroom. Ángeles Soletic, reflecting on the educational use of this encyclopedia, asks: "What can Wikipedia do to improve our educational system? What can the educational system learn from Wikipedia?" (Soletic, 2012). She highlights its importance in democratizing knowledge, and as a working paradigm of digital and collaborative culture.

Still, Wikipedia and its association with education is very questioned. This is due to the tensions arising from the possession and distribution of knowledge. Ricaurte-Quijano and Carli Álvarez (2016) use the term “cognitive capitalism” from Moulrier and Boutang to refer to the concentration and privatization of information and knowledge. The result of this accumulation is a global disparity bringing with it new forms of control, inequality and exclusion. On the other hand, they defend «the emergence of an understanding of knowledge as a shared good that must be conceived, defended, constructed», according to Ostrom and Hess (in Ricaurte-Quijano and Carli Álvarez, 2016).

Collaborative learning

Q: What’s the link between the wiki environment and the academic classroom?

A: Collaborative learning.

Wikipedia uses wiki software to perform collaborative and free access work. A wiki «is a website in which users can add, modify, delete content, through a web browser using a simplified markup language or an enriched text editor» (Barajas and Frossard, 2012).

It allows anyone to know the history of a article, useful when it comes to reflecting on the student’s learning process: you can compare versions, review, and, if necessary, go back to previous versions. It provides transparency because everything is registered and, perhaps paradoxically, it also provides a sense of ownership and trust.

The wiki environment promotes enriching discussions for a learning group. It encourages the participation of non-technical users, which results in a democratic use of the network. It provides a knowledge repository for a group. These characteristics reinforce the social dimensions of learning: the conditions that help it flourish arise from the interaction with the group.

Collaboration implies an interaction process between people

sharing the same objective. Different performance levels students work together to achieve their goal. This shared construction of knowledge ends in an object or product of learning (Barajas and Frossard, 2012). «Wikipedia is not a product, it’s produced» (Maravall, 2017).

The advantages of collaborative learning are undeniable:

“Students learn by expressing their questions, following lines of research together, teaching each other, and seeing how others learn. As a result, collaborative learning processes make those who learn responsible not only of their own learning, but also of building new knowledge with other people who are also learning”(Barajas and Frossard, 2012).

This causes a greater involvement from students and their own process, critical thinking, and problem solving skills are developed.

Therefore, Wikipedia is a paradigm of collaborative culture because writing is shared and is in constant evolution; consequently, knowledge is always unfinished.

This production is horizontal, between pairs, because - although Wikipedia is not anonymous - it does not have hierarchies (in terms of contributions to articles). For this reason, we emphasize its democratic character, given that an

article is the result of disagreements and agreements, which enriches learning.

All this is fruitful for education and, following up on Soletic’s thought, is useful for “reconceiving teaching”

- Thinking of the classroom as a production space where the knowledge can be shared and expanded upon.

- Collaborating in a community linked by a cognitive affinity: in Wikipedia one interacts, discusses and debates.

- Outsourcing class work, not just for the teacher, but for the students as well, because sharing changes the weight of the schoolwork and homework (Soletic, 2012). Thus, they receive external feedback, erasing the physical and formal boundaries of the classroom, becoming part of a global community (Ricaurte-Quijano and Carli Álvarez, 2016).

Learning objectives that can be fulfilled by editing Wikipedia

It allows the development of:

- Basic cognitive skills.
- Language skills in their mother tongue and in other languages (creating translations of articles).
- Collaboration; when working in wiki mode, both technical and communicative skills are fostered (Wikimedia Foundation, nd).

As for writing:

- Approach to learning writing processes.
- Development of intellectual exploration and argumentation skills.
- Prose production according to accepted rules and guidelines (Wikimedia Foundation, nd).
- Understanding of rhetorical purposes and adaptability for different audiences.

As for copyrights:

- Training in copyright and the possibility of their release.

- Promotion of a free culture by producing content and resources under *Creative Commons* licenses.
- Participate in a philosophy of open knowledge and learning.

In terms of research:

- Developing critical thinking through effective research practices, questioning the information found on the web, as well as the contents that are produced from it.

Regarding learning as a process:

- Promote ethical and civic competences to assume during their academic training in order to generate a positive social impact, for example, by producing quality articles (Ricaurte-Quijano, and Carli Álvarez, 2016).
- Learn by doing, learn by interacting, learn by searching, learn by sharing.

In terms of technology:

- promoting skills related to information management, creativity, and problem solving.



The task of educational institutions is to incorporate technology and digital media as a useful learning tool. To do this, one must decide on criteria to determine the reliability of information; one must teach to distrust the information found on the web; to look and search for sources and citations; one must form and teach hyper-readers (Soletic, 2012). Wikipedia is a support tool, one at your disposal, it is not a task nor an objective in itself.

This implies developing digital competences adequately. These competences

“[...] are a set of knowledge, abilities, skills, and abilities, in conjunction with ethics (values and attitudes) for the strategic use of information and to achieve knowledge objectives with the use of digital technologies tools.

Collaborating on Wikipedia demands the development of knowledge about the use of certain editing tools: how to create an article, how to add a template, how to make a table, how to make lists and categorize an article, how to add references and sources, adding external links, internal links, sections, etc. It also implies the search for information and the participation in discussions conducted with respect and rules of coexistence" (Roxana Sordo).

Why use Wikipedia as a teaching tool?

- Free access.
- Easy to learn, lots of free technical assistance on the internet.
- The editing functions are simple.
- Portable, *desktop computers, notebooks, cell phones* or *tablets* can be used.
- Most available resources come with free licenses.
- Appeals to a collective intelligence.
- Involves those who learn in the construction of their own knowledge. Balances direction and autonomy.

- Offers opportunities for collaboration among students from different educational institutions.
- Improves writing and co-writing processes.
- Upholds a vision of knowledge as a result of interaction and cooperation (Ricaurte-Quijano, and Carli Álvarez, 2016). These multiple perspectives are confronted in forums where the information that will finally remain in the article will be decided upon (Soletic, 2012).

Possible activities

- Search the internet for reliable bibliographic sources for the creation or editing of articles.
- Ask students to distinguish between relevant and non-relevant sources and citations in certain articles in order to train them in the essential practice of creating bibliography and how to properly cite texts.
- Translate or correct translations of an article. This helps expand the vocabulary and deciding on the most appropriate terminology.
- Give Structure and order to the information of an article according to a pre-established model (the Wikipedia manual style).



- Work with text typologies. Differentiate opinion texts from informative texts (respecting neutrality). Discriminate subjective assessments that must be referenced or eliminated from an expository text.
- Search for articles to review and improve upon on the subject being taught at class. Edit existing definitions on

a particular topic by adding content or making it more readable. For example: improvement of an existing article in the Wikipedia Mathematics Portal and thus experience the collaborative construction of a certain knowledge in interaction with the mathematical community.

Reviewing and re-editing articles implies a critical reading of both form and content.

- Write a featured or good article, individually or collectively, linked somehow to the courses being given. Submit existing articles to “arbitration” processes in the classroom. For example: edit in groups an article linked to what’s being taught . Basic requirements are proposed: three sections, three new data entries and eight bibliographical references added. The article is reviewed by colleagues. A list of specific questions is created about what was expected of them. These questions allow for “arbitration”, co-evaluation and self-evaluation.
- Spelling corrections, to help in the orthographic area.
- Training of students to correct errata and spelling of a wiki project.
- Incorporate photographs taken by work groups, and, giving a talk at class justifying their use.
- Illustrations: add an illustration to an article that shows graphically what was already explained with words. The complete assignment includes a monograph and a presentation in class (Wikimedia Foundation, nd).
- Videos (same as with the previous example). Use materials without copyright or with a *Creative Commons* license. The objective being to increase the use of media.

- Write an article about your personal Wikipedia experience, in depth. Add 1200 to 2000 words to an article linked to the courses being given. Include a box with basic information, for example, biographical data, images, and, at least 20 relevant and accredited citations (Wikimedia Foundation, nd).

By way of example, the following evaluations of activities are extracted from the *Wikipedia Education Program Case Studies* of the Wikimedia Foundation:

1. Select a topic, investigate, create a Wikipedia article and research on the same subject.

Evaluation:

- Content of the article (neutrality, format).
 - Research from sources beyond *Google*.
 - Organization of the article and its content.
 - Well supported and researched Article.
 - Reaction to the comments received.
- (R. Davis, Georgetown University)



2. Review and improve articles on political parties.

Evaluation:

- One month before starting and before finalizing.
 - Once a month has passed: self-evaluation; pre-evaluation and co-evaluation with open questions to motivate consideration and self-correction.
 - The evaluation and suggestions of the teacher follow the same criteria.
 - At the end, additive evaluation.
- (Sh. Gelbman, Illinois State University)

Experiences in Uruguay at the tertiary level University

“What if an assignment was to write a Wikipedia article?” In different countries of the world, programs of educational use of Wikipedia are being carried out, among them, the *Wikipedia Ambassador* program that aims to improve the writing processes of university students and the analysis of works through online publication in Wikipedia as a way of sharing good articles (Roxana Sordo, nd).

Experience of Adj. Proff. Fernando Da Rosa

Director of the Wikipedia in Education project, 2012-2015 and 2017-present (Da Rosa, 2012)
Period of activity: 2013-2015
Educational center: Communication Sciences Faculty, today called Information and Communication Faculty (Montevideo, Uruguay)
Subject: Multimedia (2 hours a week workshop)
Level: 4th year of the Degree in Communication Sciences
Group: 25 students
Type of assignment: group

Activity

Create a brief audiovisual script about a neighborhood of Montevideo (length: one minute).

The project is summarized as follows:

- Select the most relevant aspects of the neighborhood: discussion process taking place in class. The selection is limited by the short duration of the video.

- Search for free music: must investigate the topic «Copyrights» on the internet. The use of videos with a *Creative Commons* license is also proposed. This way, digital responsibility is encouraged.
- Convert videos to *ogg* format, a free format used by Wikipedia. In this way, the theme “formats” is brought on to discussion.
- Wikipedia is used to work formats and licenses.
- The video illustrates an article present in the encyclopedia, and the idea is to include it, therefore, it will be edited as such.

Tertiary level Teacher training

Experience Proff. Claudia de la Barrera

Professor of Spanish Literature and Literary Theory III in CERP North (Rivera, Uruguay), professor at CES
Period of Activity: 2018
Educational Center: CERP North (Rivera, Uruguay)
Subject: Spanish Literature III
Level: 3rd year of the Literature Faculty
Type of assignment: individual
Activity in Wikipedia:



Create an article about a work by Benito Pérez Galdós.

Process of the activity:

- Presentation of Benito Pérez Galdós. Approach realism as a literary current. Realism in Spain and in the work of Galdós.
- Reading articles on Wikipedia about realism.
- Reading of various galdosian works. Select one to create an article in Wikipedia.
- Bibliographic research.
- Sharing of the process carried out so far in a forum between students.
- Design a basic structure for the article: contents and formal guidelines.
- Production and writing in the Wikipedia user sandbox.
- Present to the teacher a printed version of the article

(unpublished in the web). Share process in the classroom, the discoveries and difficulties faced.

- Article correction: information, conceptual and formal aspects.
- Publication of the article in Wikipedia, an instance supported by Proff. Betina Sobrado (workshop guide for the “Wikipedia in Education” project)¹.
- Presentation of the finished article before the classroom.

¹ Regarding Wikipedia in Education project (current stage) see MEC’s decision on the subject : <http://www.mec.gub.uy/innovaportal/v/102069/9/mecweb/llamado---registro-docente-para-participar-del-proyecto-wikipedia-en-la-educacion?search=yes>

Level: Secondary education

Experience of Proff. Ernesto Macazaga²

Professor of Literature in Secondary Education

Period of the activity: year 2018

Level: 3rd year of Basic Cycle

Group: 30 students

Type of assignment: in pairs

Activity in Wikipedia:

Create an article about an author taught in the course.

Detailed Process:

- Presentation in class of the Wikipedia editing tools.
- Internet searches on the subjects worked at in class in order to find the shortcomings and/or absence of relevant articles.
- Compose, with the whole group, a list of 15 articles to be created (one for each pair of students).
- The theme is stories and short stories written by Uruguayan authors.
- Making bibliographic searches.

² Member of the Wikipedia in Education Project (period 2017-present)

- Writing the article respecting the style and format rules of Wikipedia.

Level: Secondary education

Experience of Proff. Betina Sobrado³

Professor of Literature in Secondary Education

Before starting practical work in Wikipedia, it’s necessary to show its characteristics in class.

The pillars of the encyclopedia allow the approach to topics linked to daily learning that transcend the very use of the encyclopedia.

The PILLARS as an excuse for learning are as follows:

Neutrality.

Allows the conciliation of different points of view, being able to make explicit the ideas that are not shared, and to accept the opinions of other users.

³ Member of the Wikipedia in Education Project (period 2017-present)

Encyclopedic content.

Makes possible the distinction of text typologies, recognizing the type of information that can be found and contributed to, as well as identifying its relevance.

Rules of etiquette.

Fosters respect and cordiality; the use of expressions appropriate to an academic environment, and with a level according to the context of knowledge.

Free content

It brings forth the subject of «Copyrights» on the internet; the different existing types of licenses; the plagiarism problem. Motivates learning the correct way of citing a bibliographic source.

As it is not a primary source, it is necessary to collect critical information, re-elaborate it, and include reliable references. These aspects highlight the importance of digital responsibility.

It has no firm rules.

Promotes the participation of all, and in a democratic way.

Period of the activity: year 2017

Level: 3º year of Basic Cycle

Group: 15 students

Type of assignment: individual

Activity in Wikipedia:

Create an article about a work by Florencio Sánchez.

Detailed process:

- Presentation in class of the editing tools of Wikipedia.
- Research about Florencio Sánchez.
- Work in class with *The Eviction*, by Florencio Sánchez.
- Individual reading of other works by the author that do not yet have an article on Wikipedia.
- Creation of the article about the selected work.

Period of the activity: year 2018

Level: 3rd year of Basic Cycle, 1st, 2nd and 3rd of Undergraduate Education

Group: on average, 25 students

Type of assignment:

1st stage, individual

2nd stage, in pairs

Activity in Wikipedia:

Dilute and correct spelling errors.

Detailed process:

1st stage

- Presentation in class of the editing tools of Wikipedia.
 - Search for spelling errors in Wikipedia articles.
 - Resolution: whether it is an error or not.
- Correction of ten spelling errors.
- Preparation of a form with the modifications made.
- Delivering form to teacher.

2nd stage

- Correction (individual) of five spelling errors.
 - Delivery of form to teammate. Co-evaluation of the spelling modifications made in the Wikipedia articles.
- The great importance of Wikipedia in education lies in the possibilities it offers for collaborative learning. Current trends mark the way towards integrated work in projects, in cooperation. This is the path we propose.

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The teacher profile in the XXI century education

by Proff. Alejandra González Reyes

Access to new technologies is transforming the teaching-learning process, and this necessarily leads to changes in the didactic practices and the need to develop new strategies for the acquisition of knowledge.

Due to the increase and massification of digital media in the search for information, the teachers must face new challenges to drive them in their work, instead of opting to refuse these changes. This requires preparation and commitment from educators, who need to be brought up to date to guide and accompany their students in the construction of their knowledge.

The educational field and its relationship with technological areas presents a varied, dynamic and full of possibilities landscape, ready to bring the student to the field of oral and written communication. Undoubtedly, this new task requires research on the part of teachers and an analysis of their practices in light of these new challenges.

Agustin Escolano Benito, BA in Philosophy and Literature, and also a professor at the University of Salamanca, states the following:

“The technological revolution that is already affecting structurally the world of education will lead to a radical change in the teaching methods and ways, as well as the ecology of the classroom in itself. These changes will directly affect the teacher’s roles and will require new training and update programs” (Escolano, 1997).

The adaptation to these changes in the sharing of knowledge supposes a preparation, one where the professor feels safe regarding his practices.

Umberto Eco, in an interview conducted by the *magazine Ñ* for the *Clarín* newspaper, said:

“In the future, education’s aim will be learning the art of the filter. It’s no longer necessary to show where Kathmandu is or who the first king of France was, because that knowledge is everywhere. Instead, students should be asked to analyze fifteen sites to determine which is the most reliable for them. It would be necessary to teach them the comparison technique” (Eco, 2012).

In this process of selection and comparison, students need the teacher's guidance to develop different strategies in their acquisition of knowledge:

"From this perspective, an important change in the role of teachers emerges, one which will change from an exhibitor of knowledge to a knowledge guide, and, ultimately, as media administrators, taking into account that these media

constitutes a very significant contribution to the change and innovation of education by generating new possibilities for expression and participation" (Escolano, 1997).

Escolano, on this new teaching role, presents the following table that shows and highlights the different competences that a teacher of the 21st century should develop for the classroom:

TRADITIONAL OR CLASSIC MODEL	TECHNOLOGICAL MODEL
Teacher as an instructor. Emphasis on teaching. Isolated teacher Usually uses resources without designing them. Unidirectional educational model based on exposure. Only truth and success provide learning. Restricts the student's autonomy. The use of new technology is not taking into consideration when planning a course.	Teacher as a mediator. Emphasis on learning. The teachers collaborates with each other. Design and management of their own resources. Bidirectional educational model based on research. Uses errors and mistakes as a source of learning. Encourages the student's autonomy. The use of new technologies is integrated into the curriculum.



Technological advances generate concern and bewilderment in some teachers. The fact that they can't be controlled and being forced to change the procedures, the ways of acting and the way in which knowledge is transmitted creates, necessarily, insecurity and resistance to change. However, we should not doubt that technology and its use should be part of the curricular design of courses.

The teacher as a knowledge manager

In the dictionary the word "manage" is defined as: "to take charge of, supervise, control" or "to succeed in dealing with, contrive." In this case, the role of the teacher in this century will involve managing the resources that the student will need for the appropriation of knowledge. All students use

Wikipedia as a source of information. It will be the objective of the managing teacher to lead young people not only on a road to obtain knowledge in this virtual encyclopedia, but also to make contributions that enrich the knowledge of their peers.

The use of Wikipedia as a teaching tool helps to incorporate the use of technology in the classroom, develop collaborative work, to use error as a source of learning, and to promote student autonomy. The edition of an article in Wikipedia forces the student to make an in depth reading of the information, selecting and ranking the knowledge, and adding data considered pertinent or that has not been included by another wikipedian.

In addition, the creation of a user to interact with the community makes them responsible for their work and gives them the opportunity to receive help or constructive criticism of their contributions.

The working environment proposed by Wikipedia is based on mutual respect, students must maintain a respectful language, as well as refining their language for peer-to-peer communication.

The article published in the newspaper *La Nación* from Argentina collects the following thoughts from what is said by a student explaining to his teacher that all necessary information is to be found at the Internet:

“A student was telling the teacher how today there is Internet, the ‘Mother’ of all encyclopedias, where you can find Syria, cold fusion, the Thirty years War, and the infinite discussion on the highest of the odd numbers. The information that the internet puts at your disposal is immensely vast and even deeper than what’s available to the teacher. The student omitted an important detail: the Internet has ‘almost everything’, except how to search, filter, select, accept or reject all that information» (Eco, 2007).

That’s where teaching becomes of vital relevance. These processes, which require critical reading, selection and categorization of content, constitute a first step for achieving student autonomy and self-management.

Formerly, young people had to perform this task without having the technology, the volumes of information were considerably smaller, and the possibilities of editing, correcting or contributing data on the different subjects were null. Nowadays it’s fundamental to develop strategies to improve the motivation and efficiency of the learner regarding the management of this avalanche of knowledge and information.

To set an optimal scenario for the development of these strategies it’s necessary to reconceive the concept of teaching and transform the classroom into an arena of production and collaboration. Thus, the results will be seen not only by the teacher, but by the community as a whole.

This way, students’ work will be shared, and be part of the collective construction of knowledge. The teaching role will also be benefited, as other collaborators will help to evaluate and guide the students.

Free access to information: developing a critical autonomy

On occasion teachers feel “threatened” by the different and varied sources of information available to the student. The speech becomes, in this case, prohibitive, students are suggested that “they should not” access certain websites, when the most educational and beneficial thing would be to teach them to distinguish between “reliable” articles and “unreliable” articles. This research and selection will prepare the young for new challenges in the future, and will provide them with a tool that will serve them throughout their life.

“The teacher can not and should not compete with other sources of information, but become a unifying and analytical element for them. Right now it’s not enough to know the content of the courses or subjects to teach well. The teacher must be a connoisseur of the subject, but must also learn to be an expert information manager, a good administrator of the resources at their



disposal, and from there, support the students’ learning» (Escolano , 1997).

The objective is to promote autonomous learning, become a facilitator that organizes the opportunities in which students seize solid and lasting knowledge.

In order to obtain good results in their teaching task, teachers have to have three fundamental pillars: reflective attitude and criticism of their practices; good bond and empathy with the students; and a fluid handling of new information technologies. These elements are vital for a good development of their new role as mediators and guides.

The access to and knowledge of new technologies in which our students navigate should be the force that drives the teacher to be better. Their duty is, together with imparting knowledge, to search and inquire about the most convenient ways of approaching the digital world of information. Agustín Escolano mentions the skills necessary for the current teacher:

“Certain skills and capacities are necessary when managing these powerful tools, given that the technological training of the teaching staff is becoming an imperative in our times, and that leaving aside unfounded prejudices and resistances that would have us believe that new technologies can displace or even supplant the role of teachers. What is increasingly being asserted is how teachers with mastery in new technologies will displace the teacher who don't have this capacity »(Escolano, 1997).

The implementation of educational projects

The research, selection and writing/editing of an article in Wikipedia can be a shared project between teachers and students. Teachers can select the subject to be worked on and guide students in their search for reliable information in the different available means of information.

To carry out this task, the student will have to learn to:

- Differentiate between factual and analytical writing styles.
- Develop abilities for critical thinking and the evaluation of information.
- Learn to work in collaborative working spaces.
- Be tolerant and respectful of the contributions of their peers.
- Know the process of creating an article according to the rules and pillars chosen by the Wikipedia community.
- Understand that they are not only consumers of information, but that they are capable of also be creators.

For this work, teachers will benefit from the support of the experienced wikipedia community in guiding and evaluating the students. It's only necessary, during the process of preparing an article, to get in touch with people who have been editing Wikipedia for a long time and have a solid knowledge. You can also count with the plethora of tutorials available online, that will serve as guides in a process of several phases.



It is important to look for relevant topics and subjects, and then guide the students. There is no need to fear trial and error in the different stages of production, as making mistakes is part of the process towards contemplation and autonomy. Presenting the work done before the educational community shows the fruit of a project designed and carried out in continuous collaboration between students, wikipedians, and teachers, allowing other actors in the educational system to assess and imitate their work.

This exercise at the institution of which students are part of, rewrites their role, strengthens their self-esteem, gives them faith in their work and places them as a pillar in the creation of collective knowledge.

Towards a permanent education

It's fundamental to understand that all actors involved in the educational process are educators as well as apprentices. The teacher needs to constantly acquire new knowledge and, often, this knowledge comes from the students themselves. In this educator-educator relationship, a bond is established that can be very enriching and motivating for both parties. For learning to happen meditation and consideration are necessary.

Regarding this subject, Icami Tiba says as follows:“One studies to learn, the person who is always willing to learn is the one who will survive the knowledge revolutions. Whoever believes that he or she already knows everything and stops learning will be overtaken tomorrow by those who continued learning. That’s why we have to always be learning» (Icami, 2009).

However, meaningful learning is only obtained after a thoughtful process about the acquisition and selection of information:

“Therefore, much more important than knowing a large amount of information from memory is knowing where to look for it and learning how to use it. And the most important thing is to constantly be expanding our knowledge, because thanks to it we become more efficient in this competitive world” (Icami, 2009).

Educational institutions must rethink their structures and courses, because beyond obtaining a degree, there is a great need for permanent education of students, for them to be part of this unfinished process.

PERMANENT EDUCATION	CONSEQUENCES
Designates a project. Global. Restructuring the educational system and development of all training possibilities outside the system. Minds are the subject of their own education. Not limited to the schooling period. Educational processes must be conceived as a whole.	Not a closed system. Not sectorized. It goes beyond the possibilities of the education system. Participatory, decentralized Trans-school. Links all educational processes.

Mercè Gisbert Cervera, in the table above, elucidates the advantages of this permanent education (Gisbert, 2009):

Although this previous table has to do with a perspective on the future of the student in the job market, each item has its beginning in the seed sowed regarding the use of information technologies in the classroom. By guiding the students in the correct use of Wikipedia, and in the importance of being part of a community that revolves around the correct manipulation of knowledge, by teaching them to investigate, organize, edit, and create in the different areas of knowledge, by encouraging them on a continuous search that will not be exhausted during their academic pe-

riod, we'll be contributing to the transformation of a student from a reader of contents into young researchers, critical, reflexive and autonomous with respect to the world that surrounds them. An education professional committed to this task must prepare new generations for the proper use of information technologies and consolidate in their students a respectful and serious conduct in their use. For this it's necessary to renew our practices so as not to continue teaching with tools from centuries past.

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Encyclopedism 3.0: from challenge to innovation

by Proff. Lucía González Dolio

The project "Wikipedia in Education" was born in 2012 as an idea by Professor Fernando Da Rosa, who dared - and continues to do so - question the members of the educational community about the importance of the use of technology in our teaching practices, especially in the use of a tool called Wikipedia, the free encyclopedia. The ambitious project of the XVII century called *Encyclopedism*, whose most recognized representatives were Denis Diderot and Jean d'Alembert, had the pedagogical purpose of transmitting knowledge, valuing knowledge as a necessary means to reach the light of reason and create connections to access to knowledge. In addition, it was proposed that the promotion of knowledge was a necessary means to push society towards the conquest of modernity. Knowledge is the basis of social progress. Through the *Encyclopedia*, democratic theses are defended and the weaknesses of the existing rules is criticized. The Enlightenment conceives knowledge as a democratic good, that is, as a legacy that must be available to any person, opposed to the tendency to knowledge held only by few people and who usually belonged to the highest social classes.

This *Encyclopedia* developed in France had the purpose of organizing knowledge under a rational criterion. Main ideas are reflected, for example, science as the basis of social progress in each time and the natural order as a means to achieve earthly happiness. 150 people from different backgrounds worked together: theologians, artists, philosophers, scientists, magistrates, and craftsmen. It was 28 volumes long. The XVIII century is known as the *Enlightenment*, a praise to knowledge as a necessary means for human development. This is where Wikipedia makes its substantial contribution and challenge us. Does it not take up again the philosophical foundations of the ambitious project carried out by Diderot and d'Alembert? Wikipedia is among us, provoking a revolution in the paradigm of knowledge that takes us back to the roots of the *Enlightenment*, and brings us closer to a more accurate knowledge of the world. Therefore, it is born as a challenge that proposes to contend at two major levels: at the macro level, the educational policies of our country and, at the micro level, to dialogue with our practices, our conceptions and values, that are being discussed daily in our classrooms, building knowledge and deconstructing those that are outdated.

The challenge of educating in the 21st century

As a challenge, is understood as a practice or situation presented to us against which we must mobilize a set of competences, how tos, and knowledge to avoid the cognitive imbalance created.

Because of the above, the project “Wikipedia in Education” aims at having all members of the educational community -family, students, education professionals, and institutions- prepared to address this cognitive imbalance, to update teaching practices, and to adapt contents, courses and subjects to the needs of the students and the educational context of our reality.

To exemplify this we need to mention the first great challenge that our public education had to face: “Plan Ceibal”. The Ceibal Plan is an uruguayan socio-educational project. It was created by decree on April 18, 2007 “in order to carry out studies, evaluations and actions necessary to provide each child in school age and each public school with a portable computer, as well as training teachers in the use of said tool, and promoting the creation of educational proposals in accordance with them”.

Ceibal is a retro-acronym meaning *Basic Educational Information Connectivity (tool) for Online Learning (Conectividad Educativa de Informática Básica para el*

Aprendizaje en Línea). The plan was inspired by the *One Laptop per Child* project shown by Nicholas Negroponte at the 2005 World Economic Forum. Unprecedented in the world for its scope, the plan gave all children under state education centers with a laptop with wireless connection (wifi), for use both inside and outside the classroom, thus providing connectivity to educational centers and other environments throughout the territory of Uruguay. As time went on selective Wi-Fi networks were installed through MAC addresses in educational centers, (allowing access only to XO equipment designed by the OLPC collective, checking the MAC address of the equipment that is connected to) and filtered according to a white-list were only OLPC devices were allowed.

Starting in 2014, portable equipment not belonging to the Ceibal Plan was allowed access to this type of network through the application of a Java 4 file and, as of 2015, through a *router* installed application, having in both cases, been previously registered in the Central of Ceibal or, failing that, by being a teacher. The Ceibal Plan seeks to promote digital inclusion in order to reduce the digital divide both with other countries and among the citizens of Uruguay. The mere inclusion of technology in schools does not ensure the fulfillment of this goal, this must go along with educational practices according to the new requirements presented for

teachers, their students, and the students’ families. Thus, the plan is based on a complete system that seeks to guarantee the use of available technological resources, teacher training, and the preparation of appropriate content, in addition to family and social participation.

The strategic principles that comprise this project are: equity, equal opportunities for all children and all young people, democratization of knowledge, the availability of tools to learn and having a better learning experience, not only in regard to the education that is taught at school, but also to learn for themselves how to use modern technology. As for general objectives, it seeks the improvement of educational quality by bringing technology into the classroom, the school, and the family nucleus; promoting equal opportunities for all students in Primary Education, providing each child and teacher with a laptop; developing a collaborative culture in four lanes: child-child, child-teacher, teacher-teacher and child-family-school, and promoting electronic literacy in the pedagogical community by following ethical principles.

In addition, it promotes the integrated use of portable computers as a support to the teaching practices of the classroom and the school center, in order to ensure that the training and updating of teachers, both in the technical and pedagogical areas, makes possible the educational use

of these new resources; produces educational resources with support from the available technology; promotes the involvement and appropriation of innovation by teachers; generates support systems and specific pedagogical technical assistance aimed at school experiences while ensuring their proper development; involves parents selection and promotion of an appropriate and responsible use of technology for the benefit of both the child and family; and promotes the participation of all those involved in the production of relevant information for decision making. The large enumeration above shows how the “Wikipedia in Education” project is perfectly aligned with the needs and objectives set forth by the Ceibal Plan.

The new paradigm of education

This first challenge implies a change of paradigm, that’s why it’s necessary to know what this transformation is about, and how those involved with this change have to react. To explain this change it’s necessary to take into account two concepts that will allow us to approach this phenomenon in the most appropriate and pertinent way. On the one hand, we recognize digital «natives», an idea that Marc Prensky coined in 1978 and on the other, «digital immigrants», a dichotomous concept that arises from the

interaction of the former with individuals from generations other than their own.

Students of the 21st century have experienced a radical change with respect to their immediate predecessors. We are talking about something much more complex, profound and transcendental: there has been an important discontinuity that has created a whole “singularity”, a discontinuity motivated, no doubt, by the rapid and uninterrupted diffusion of digital technology.

It’s evident that our students think and process information differently from their predecessors. In addition, it’s not static, it’s prolonging itself in time, it’s not interrupted, on the contrary, it increases over time, their skill in the use of technology is very deep.

The affirmation that a diversity of experiences causes the creation of multiple brain structures leads us to reflect that the brains of our young people experience changes that make them different and unique.

This “accent” of the digital “native” can be seen, for example, in the fact that they launch themselves to surf the internet and only afterwards embark on the careful reading of books to obtain more information and learn. Firstly, this new generation opts for practice and then for theory, which allows them to survive and is what we permanently see in the classroom when students, when asked to search

for information, consult different digital sources, opting, lastly, by consulting a another main source, a book. Moving forward it’s important to keep in mind that Wikipedia is a tool to be incorporated into our conception, planning and elaboration of sequences, it’s not a primary source of information.

There is a problem, a rupture, a chasm, a digital and generational gap that can not be ignored or accepted without trying to change or alleviate the situation.

What would be, broadly speaking, the differences between “natives” and digital “immigrants”?

- They want to receive information in an agile and immediate way.
- They are attracted to multitasking and parallel processes.
- They prefer graphics over texts.
- They are inclined towards random accesses (hypertexts).
- They work and perform better when working in a network.
- They get immediate satisfaction and reward when they understand their progress, their successes.
- They prefer to be instructed in a playful way over a traditional one.

On the contrary, digital “immigrants” do not seem to value sufficiently the skills that the digital “natives” have acquired and perfected year after year through interaction and



practice, and prefer to move within what is known to them by virtue of their way of learning.

It's a reality that students work in a network, with that network using Wikipedia and citing it in their work and in their searches.

For this reason, nowadays students lack the patience and attention span necessary when exposed to presentations or conferences that go on over for a long time; they also fail to see the logic of learning within a precisely sequenced framework designed from a "progression" of knowledge.

Digital «immigrants», on the other hand, think that the methods by which they learned are still valid.

Getting used to traditional methods would only take a matter of time and will, rather than trying to speak the same technological "language". Perhaps this is one of the problems 21st century education will face, an imminent need for translation, being able to listen and understand each other speaking the same language.

Does this mean digital "natives" do not pay attention and, in addition, show themselves to be rebellious? They respond to this claiming the training process does not attract them, does not motivate them, does not drive their interest, because everything is valued from the perspective of experience.

The willingness of teachers to instruct the "natives" according to their viewpoint makes the process much more difficult, thus generating repetition, abandonment, and finally, accepting the traditional ways, although never convinced of their benefits.

At this crossroad, new questions are asked: what should be done? Should something be changed? Must both "native" and "immigrant" learn together again, once the former have been forced to assume old-school educational practices against their natural tendencies?

The answer to this question is a complex one: digital "immigrants" tend to become anxious and distrustful of technology in their learning process, which is why "natives" are forced to give in and retreat. This example is often seen when visiting different educational institutions in the departments of Uruguay, where the faculty ignores the benefits of the encyclopedia, preferring instead to consult teaching manuals, dismissing the opportunity to dialogue with this omnipresent tool, that allows to generate new room for dialogue and discussion, construction, and reflection on knowledge.

On the other hand, it seems difficult to produce "native" / "immigrant" interaction if their brains function differently. Also, sometimes this learning is not significant because it's



being done from a new language, they reject their own and tend to accept what is imposed.

This trend, tough decreasing, still persists. More and more teachers are updated, voluntarily deciding to include digital resources in their work, with Wikipedia present when it

comes to developing projects and creating new content. In any case, an urgent reconsideration of methods and contents is required. It's not enough to forget to educate the digital "natives" in the hope that they will be formed by themselves. It's necessary to critically analyze our

methodologies and the contents they receive. We propose some challenges that will be faced when integrating Wikipedia into the classrooms. 21st century teachers will have to learn to communicate with their students through a common language and style. This doesn't mean changing the significance of what's important, of the critical knowledge or methods, nor does it imply teaching different abilities, it simply refers to being more creative with the available resources. In terms of content, we can classify them into two types: those inherited and those of the future. The inherited content includes reading, writing, mathematics, and logical thinking as taught in modernity. Future content includes both digital and technological aspects: software, hardware, robotics, nanotechnology, genomes, etc. All without forgetting ethics, politics, sociology, foreign languages and philosophy. Undoubtedly, the content of the future is extremely interesting for those who study today, but how many digital "immigrants" are ready to teach it? In that sense, an urgent reconsideration of methods and contents is imposed, one that balances the use of technology and the tools for learning. If we are true educators, we need to think about how to

teach both inherited content and that of the future, using the «language» of digital «natives». In order to try and instruct or teach inherited contents, a "translation" exercise is necessary, as well as an important change in the scope of the methodology used, a capital element to be considered. This second element, the methodology used, is truly novel and clusters all the special aspects of content and thought. When considering the new subject being learned, and how old subjects are learnt in a new way, it's irrefutable to consider the validity of both in the 21st century. We must use all of our imagination, all of our inventiveness. Everything must be adapted to the language of the "natives". This means taking advantage of spaces in which students feel free and comfortable to act, to do, and to risk. It's in those spaces where they need to be challenged, proposing challenges that allow them to build their own, adapted, and meaningful learning. What better strategy than to take advantage of the works and experiences that have been carried out, successfully, completely satisfactory experiences, that merged a linguistic community and motivated an educational community? We ask ourselves once again: Why not Wikipedia? Educators should try to keep an open mind without

characterizing a priori a method as inefficient, they ought to forget their traditions and their tendency to repeat didactic formulas of times past. And, if they really want to connect, communicate and interact with the digital "native" students -which at this point might as well be all of the students- they will have to willingly submit to changes. The time has come to ignore fears and objections, and to join a community that evolves day by day, that is remodeled, a community where knowledge is developed from the individual and shared at a collective level, a community that we represent and feel represented by. If teachers and educators persist, they will achieve their goal, even in the long term, as well as satisfaction for the successes achieved, and the duly recognition by their students and society as a whole. As we continue, the dichotomy between digital "natives" and digital "immigrants" lingers, we must identify what elements separate them to generate, a posteriori, elements that consolidates both and outlines a first approach to understanding how to succeed in the educational processes. It's interesting to present an analysis of the situation from a numbers perspective: digital "natives" invested more than 10,000 hours in video games; received or sent more than 200,000 emails; have more than 10,000 hours spent using

cellphones; more than 20,000 hours in front of the TV; more than 500,000 advertisements seen and, perhaps, about 15,000 hours reading books. This is today's students. The previous data represents the technological reality in which they live before even finishing their university studies. One of the objectives of the "Wikipedia in Education" project is to train students who are critical, that is, capable of reading, understanding and contemplating knowledge. For this to happen, reading habits are a must. Reading has a different neurology footprint in our brains than others, such as spoken language. Reading is one of the primary goals of schools. To acquire this competence, you need to practice it with attention several hours a day, five days a week. But, when our brains have more or less taught themselves how to read, they were again trained by television. Children who have grown up and developed along with the advancements of computer, "[...] think differently than the rest of the people. They develop hypertextual minds. They jump from one thing to another. It is as if their cognitive structures were parallel, not sequential" (WD Winn, 1994). Other researchers have said teenagers use different parts of

their brain and think differently from adults when in front of a computer.

Now we know their minds go even further: their brains are, almost certainly, physiologically distinct. Most researchers agree that such differences are more than qualitative. For example, as a result of repeated experiences, certain brain areas are larger and more developed, while others are less developed.

It's important to highlight, then, the ability in students to concentrate, an interesting point that challenges teachers, both on a practical and a content level. The 21st century offers us a new generation with a mixture of different cognitive abilities.

Scientific research has shown students ask a question in class every 10 hours. Therefore, it's not that digital age "natives" are not capable of paying attention, but that they choose not to, or if they choose to, they comprehend only the essentials to make sure they understood their meaning.

We have also heard complaints from teachers about the difficulties shown by students when reading and thinking. How can we help?

The key area to have been affected seems to be reflection, meditation, contemplation, which enables us, according to many theorists, to generalize, since we create "mental

models" based on our experience. That's why reflection is also treated as the process of learning from experience.

In our world, considered by Bauman as late or liquid modernity, there seems to be less and less time and opportunity to reflect, a situation that challenges us and worries us.

One of the most interesting challenges and opportunities offered by teaching digital "natives" is finding and inventing ways to include reflection and critical thinking in learning, incorporating it into the courses, or through a process of analysis directed by the teacher, but in the digital "natives" language.

We teachers are compelled to give more, to do more, as it's also our challenge.

These active, connected, digital "natives", are accustomed to speed, immediacy, multitasking, random access, images as a first instance, fantasy, to a world of immediate rewards and gratification, video games, and online games. They are bored with today's education, with all the good intentions it may have. But the worst thing is that multiple capabilities offered by new technologies, such as, parallel processing, awareness of images, random access, and hyperlinking, elements which have a profound and positive implications in their learning, are almost ignored by many educators.

The cognitive differences of the digital "natives" demands new approaches in education, more adjusted to their ways. Considering everything that has been exposed here, in synthesis, today neurobiologists and social psychologists agree that the brain can change when exposed to new stimuli. Education professionals surely know that they do not share or communicate with their students as they did with past generations. There is a crisis in our practices and in our educational institutions.

No one can ignore this reality, we'll be analyzing possible solutions next.

On the one hand, teachers can choose to ignore what they see with their own eyes, feel with all their senses and intuition; they can convince themselves that the "native" / "immigrant" digital gap does not exist and continue using their traditional methods with the false illusion that they are effective.

On the other hand, they can naturally accept the fact that they have become "immigrants" in a digital world. They can analyze their own creativity, that of their digital "native" students, as well as other sources that may help them to effectively share their valuable knowledge and wisdom. But they must do it through the new language that now surrounds them.



In the education of students, the route that other teachers choose, that we choose, ultimately, depends a lot on all of us, on our commitment as education professionals, on our competences, as well as on the educational policies that allow inclusion and equity.

To achieve efficiency and effectiveness in our educational practices it's important to remember the affective pillar role that teachers play over students. A significant education, although based on knowledge's relevance, will have a third factor that consists in how the values inherent to education are imparted.

The current educational model places greater emphasis on the authority exercised, on the differences in power that are held. Adolescents present at institutions seek to go against authority, it's a normal stage of adolescence, therefore, teachers must understand that each generation is a carrier of new beliefs, values and needs.

The role of institutions is, according to Denise Maerker (2011), "the daily update between us and them", and how we make them understand our teachings, how we strive to be closer to them, to be part of their culture; to promote equality, what unites us and not what separates us.

At the institutional level, it is important to establish that there are two major types of practices, or "languages", as

told by Uruguayan psychologist Carmen Rodríguez (2012) in *Subjective processes and the educational institution*.

On the one hand, we find "macro-politics", that is, the ones that operate over a territory, have a general discourse, and handles percentages and statistics related to the rates of promotion of grades, repeaters, desertion: a numerical mapping of the educational population.

On the other hand, we find "micro-politics", that is, everyday practices, which are carried out in the corridors, in the teachers' rooms, in the classroom, in everyday life. Rodríguez (2012) states there's a barrier between the two languages, and that it's necessary to start thinking about translations, communication between these two policies. What for?, to achieve the social inclusion role of institutions. To carry out this idea Rodríguez proposes organizing the knowledge that is experienced in this daily "micro-politics". In this framework, and from the existence of two languages, both at the education policies level and in the link between teacher and student, is where Wikipedia project is placed in our day to day.

For changes to materialize, for the benefit of all members of a community, it's necessary to create commitment, not only from institutions, teachers and students, but also from families.



Final considerations

Wikipedia is just one more everyday tool. Anyone can observe empirically the number of queries it receives daily, because it represents an inexhaustible source of knowledge, a repository of knowledge that makes information available

to all members of society, both in terms of the style of writing and its linguistic suitability.

Wikipedia is a creator of opportunities representing encyclopedism 3.0, it brings forth collective reflection, which leads to learning about emotional and social intelligence by being part of a community that represents interests, and,

in which the game of power, as in society, becomes visible. Paradoxically, this fact drives us to know ourselves even more, to know how we interact in society and how we deal with our own frustrations and mistakes.

Another aspect of this tool is the access to information in real time, which creates endless opportunities to modify what is not relevant, what is not current, to amend errors, to build a tolerant community that is managed through the educational use of error as an opportunity for constant improvement. It's important to mention that this work of uniting tool to family improves the metalinguistic reflection, contemplation. Because through language new knowledge is acquired that will allow the language to become the object of contemplation through its understanding.

The "Wikipedia in Education" project is an innovative instance that takes advantage of the current historical-cultural conjuncture to build observant, critical readers who are not indifferent to their environment.

This process leads students to ask more from their world, enriching their cultural baggage and creating new experiences in which, through knowledge, the protagonism of the their learning is conveyed.

It would be interesting to consider the extension of this project not only to the public sphere but also to various

private institutions. Wikipedia would be a welcome challenge for working with children of all ages.

Lastly, this project implies a challenge for the next generations, who will resume the ideas arisen from this new way of conceiving and thinking about education, all on the foundations of constructivism, inclusion and motivation.

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Wikipedia and the collective construction of knowledge

by Proff. Ernesto Macazaga

Introduction

This text aims to showcase some characteristics of Wikipedia -the online virtual encyclopedia- to reflect on its role as an environment for the collective construction of knowledge. We'll start by showing the parallels between Yongle's Chinese encyclopedia of 1408, a universal encyclopedia project devised by writer HG Wells in 1937, and how they share several of the factors making Wikipedia the most visited reference site in the Internet. In a second instance, we'll review some Wikipedia mechanisms aimed at guaranteeing the quality of the information contained, providing elements that'll allow us to elucidate to what extent it can be considered a useful and reliable tool, especially when thinking about its use in education. Thirdly, we'll consider the possibilities Wikipedia offers for the collective construction of knowledge through some of the key ways of its operation. Finally, a brief conclusion of the ideas discussed.

1. Wikipedia and digital information media

1.1. The sum of all human knowledge

In 1403 Chinese emperor Yongle, of the Ming dynasty, entrusted more than 2000 scholars with the task of creating a work that would gather and synthesize all texts available until then. After four years of work, a colossal product, composed of 22,937 manuscripts scrolls was published, divided into 11,095 volumes that grouped the knowledge in sections such as art, astronomy, history, literature, medicine, natural sciences, etc. It is, to this day, the largest paper encyclopedia ever created. But its monumental dimensions made its reproduction or distribution practically impossible. Only one complete copy was made in 1567, and both the original and the copy were lost over the centuries due to fires, invasions, and looting. Presently, only scattered fragments equivalent to 3.5% of the original content survive (Wilkinson, 1998, pp. 604-605).

Several centuries later, in 1937, British science fiction pioneer HG Wells published, as a collaboration with the French encyclopedia, a short article titled *World Brain: The Idea of a Permanent World Encyclopaedia*^[1], in which he described a project for a world encyclopaedia which anyone could consult from anywhere:

“As the nucleus of such an institution there would be a worldwide synthesis of bibliography and documentation with indexed archives of the world. A large number of scholars would commit themselves to perpetually perfect this index of human knowledge and keep it updated. [...] It can be, and probably in a short time will be, accessible to all individuals. [...] You do not need to concentrate it in one place. [...] It can be reproduced, accurately and completely, in Peru, China, Iceland, Central Africa” (Wells, 1937).^[2] It would have been, apparently, a work synthesizing all human knowledge, making it accessible to anyone, at any time, anywhere, and would, in addition, be constantly updated by a large number of people.

Still distant from the idea or reality of the Internet, Wells understood that the only way to carry out such a project would involve a new medium, different from paper, to store information; a system that would have allowed large amounts of data to be stored in very little physical space, while making

it also possible to transmit and reproduce them at a distance: “There is now no practical obstacle preventing the creation of an efficient index of all human knowledge, ideas and achievements, for the creation, that is, of a complete planetary memory for all of humanity. [...] A microfilm, colored where necessary, with the approximate size of one inch and the weight barely higher than that of a letter, can be duplicated from the records and sent anywhere, and can be enlarged on the screen so that the student can study it in every detail” (Wells, 1937).

Wells’ project, unlike Yongle’s encyclopedia, was not subject to the limitations imposed by paper. The microchip would store much more information in less space, although it would be limited by its material existence: it had to be sent from one place to another. The technological innovations of the digital era will be key to muster this obstacle and enable the development of a project that, as will be shown, shares a good number of coincidences, but also certain peculiarities not previously imagined: Wikipedia.

Yes, yes... this is a very good article... but you must know that for every reliable article there are thousands written by unknowns. Are you able to tell me who wrote this one?



1.2. Wikipedia as a universal and collective encyclopedia model

Since its origins in 2001, Wikipedia defines itself as “the free encyclopedia that everyone can edit”: *encyclopedia* meaning a work that seeks to gather and organize a synthesis of human knowledge; and *free* since all its contents are available under the *Creative Commons* license^[3], which legally guarantees freedom of use and distribution (also its gratuity^[4]); and *editable*, since it uses a *software* allowing any anonymous or registered user to modify its content from a browser. All of its articles (numbering more than 49 million

by November 2018), in all its languages (more than three hundred) have been redacted voluntarily and collectively by users from all over the globe.

Unlike Yongle’s, Wikipedia is not a paper encyclopedia, which allows it to include an impressive volume of information in virtually all spoken languages. The volume of information is of such a magnitude that if the English Wikipedia was to be printed into 700 pages tomes, it would be necessary to print approximately 7500 volumes.^[5]

If we compare it with other encyclopedias, even in digital format, the differences in size are substantial:

Encyclopedia	Articles (approx.)
Wikipedia (English)	5,700,000
Wikipedia (Spanish)	1,450,000
Enciclopedia Espasa (Spanish)	1,000,000
Brockhaus Enzyklopädie (German)	300,000
Encyclopedia Britannica (English) [online version]	120,000
Encarta 2005 (English) [discontinued]	63,000
Enciclopedia Italiana (Italian)	60,000

SOURCE: Wikipedia: Size_comparisons (2018)

This may be one of the reasons why Wikipedia is, nowadays, the most consulted reference site on the internet. In October 2018, it received, worldwide, 508 million daily visits, 249 of which took place in the English version. The Spanish version received more than 35 million visits per day (*Page Views for Wikipedia*, 2018). It is the fifth most visited website in the world (*Alexa Top 500 Global Sites*, 2018) and the seventh in Uruguay (*Alexa Top Sites in Uruguay*, 2018); it would be the most visited after excluding search engines, email services, and social networks.

Its uses are so widespread that today it seems to be the reference site by default when looking for general information on any topic, and it’s almost always the first site offered when doing *Google* searches. Its applications in the educational field are more than predictable: it has been mentioned (Morduchowicz, 2018, p.4) that the vast majority of adolescents use the first page of an Internet search for their chores. Due to the large number of topics covered, the ease with which you can access its contents in any language, and the possibility of using them almost without restrictions, it is foreseeable that a site like Wikipedia will be used by academics and students from all over the world. However, a model such as the one being discussed leaves without answer multiple questions that need to be discussed. This will be dealt with in the next sections.

2. Reliability criteria

2.1. The editors

As already mentioned, one of the most characteristic features of Wikipedia is that anyone can edit it. All its articles -with the exception of a few that can be temporarily protected by a user with librarian privileges^[6]- have an *Edit* button allowing to completely modify its content and make changes that are saved in real time, without going through any other agent of control, neither human nor computer. Any user can create an article from scratch, which can be improved successively from the accumulation of individual contributions, so that no one can claim ownership of its content or impose restrictions of any kind. Any information that conforms to the Wikipedia standards - as will be seen below - can be included if it is presented in accordance with the style conventions approved by the community.

For this reason, its content shows great dynamism and is updated frequently, while the volume of information increases steadily, although it is clear that this does not guarantee its quality. Editing is one of the aspects receiving the most praise and criticism.

2.2. The information quality

The possibility that any individual with access to the internet can use the encyclopedia, contributing to it in order to improve it shows that we are dealing with a tool that makes access to and knowledge construction accessible. Despite this, it can also generate questions related to the credibility of its content: there's always the possibility that any malicious user adds errata, distorts information, or manipulates it according to their convenience. These editions are called "vandalism" in Wikipedia jargon, and they occur relatively often, as well as others that, while not voluntarily malicious, are unsuitable for the encyclopedia. Be it false information, doubtful, not corroborated, not encyclopedic, tendentious or partial, there are several editions that a user without an adequate knowledge of the rules of Wikipedia can perform. The fact that a project of this type has grown steadily over more than 17 years is an indication that it can indeed work, at least in the way it has done so far. In large part this is due to a good number of active and regular users -wikipedians[7]- who monitor new changes and editions in search of the ones not meeting the requirements of the encyclopedia (see next section). These editors, mostly anonymous, dedicate their time to provide quality content and monitor the editions

of other users that are less experienced or determined to collaborate with the project.

The Wikipedia *software*[8] includes a series of features that facilitates this task: each new version of an article can be compared with previous ones with just one click, with changes visually highlighted. It's very simple to introduce errors, but it is also very easy to correct them. The editor that detects an error and wishes to correct it does not have to reconstruct the article "manually" (deleting the error and rewriting the modified), just click on the *Undo* link that is shown in *View History*[9].

Some estimates (Pérez Lanzac, 2009) mention that an error, once added, remains an average of five minutes before being corrected. Articles on topics that usually create controversies can be "vandalized" several times a day, although the more visits and editions they have, the greater the number of users who monitor them[10], decreasing the time that an error remains.

At a first glance, this way of operation could yield unpredictable results, but the progressive improvement in Wikipedia content that has been seen over the years in the versions with more articles (mainly the English and German

versions, closely followed by the Spanish)[11], allows us to propose a plausible hypothesis: the greater the number of editors in a Wikipedia article, the higher the quality of its content and the lower the existence of errors. Several studies

conclude that the information from Wikipedia is, in general terms, reliable: errors are minor and are not much more significant than those present in the British Encyclopedia[12].



2.3. The Wikipedia policies

It's inevitable to question the mechanisms that determine what information should be included in Wikipedia and how it should be presented. Here comes into play a series of policies or guidelines that the encyclopedia offers to guarantee the quality of its content. Unlike what anyone might think, Wikipedia is anything but anarchic: it has so many policies and guidelines that it's not easy for users to even know most of them; ignorance is one of the main reasons why many incipient Wikipedians do not manage to adapt to the ways of the encyclopedia. These policies have been decided by voting within the community and - except for the five pillars that define the identity of Wikipedia[13]- can be revoked or modified at any time.

Among other objectives, these standards seek to ensure information is verifiable and duly referenced and cited. Wikipedia is not a primary source, that is, all the information included must have been previously published and be duly cited.

In turn, the reliable sources policy states that sources used in articles must be reliable, independent and published, not all of them have the same status:

"Reliable sources are credible materials in that they are published under a process offering security regarding its veracity; their authors are generally considered as trustworthy or authoritative in relation to the subject at hand.

Independent sources are those created by persons or entities not subject to other persons or entities. Their style tends to be of a neutral nature: they are directed to the greater part of society "(Wikipedia: *Fuentes fiables (Reliable sources, excerpt from the spanish version)*, 2018).

The success of these policies is not total and depends to a large degree on the number of editors actively participating in the project, reviewing and controlling recent changes[14]. This task is not too complex: those who do it do not have to be (although they can be) specialists in the subject of the article they are reviewing or even need to know technical details; they should only check that the new added information comes from reliable, accredited and well-referenced sources, and that it is included and cited along the accepted style conventions.

2.4. Manipulation of content and fake news

As previously discussed, it's not easy to include erroneous or false information in Wikipedia, and least not for very long, even taking into account the vandalist editions carried out sporadically by individual users. But, what happens if a certain group of interest, in a systematic and periodic way, intends to manipulate the content of Wikipedia, that is, distort it, in order to benefit itself?

As already suggested, it's not impossible that at certain times, certain articles are deliberately edited in order to bias a point of view, disseminate false information, or defame a person or institution. The false accounts created for these purposes tend to have a short life: the reputation of the users is a deciding factor among editors, so editions by those unknown among the members of the community will be monitored and reviewed in detail. There are also computer tools[15] that detect the creation of fraudulent accounts (created to perform systematic editions in certain articles), easing their discovery.

Another aspect to consider is related to current information. Although not its primary purpose, due to its capacity for updating, Wikipedia is often used to research recent or



ongoing events. It could be assumed that it's common for articles to be modified to try and spread false information, in a phenomenon analogous to false news (or *fake news*), but experience has shown otherwise: the controls imposed by its policies prevent the survival of this type of information. Because of this it has even been used by *Facebook* and *YouTube* to detect and fight false news (Cohen, 2018).

3. Wikipedia and collective intelligence

In Wikipedia, control of information does not fall on any entity, institution or person, but on the community. The community is understood as the set of users that actively participate in editing content. The information presented and the way to do it are decided by consensus among the editors. Beyond the epistemological issues that could be discussed in relation to this mechanism, the model proposed by Wikipedia can be analyzed as a case of *collective intelligence*, understood as:

"[...] It is a form of universally distributed intelligence, constantly enhanced, coordinated in real time, and resulting in the effective mobilization of skills. We add to this definition this indispensable idea: the basis and objective of collective intelligence is the mutual recognition and enrichment of people [...]. My initial premise is based on the notion of a universally distributed intelligence. No one knows everything, everyone knows something, all knowledge resides in humanity" (Lévy, 2004, p.19).

Most of the time an article grows slowly but steadily: each new edition incorporates or improves information from

previous versions, discussion among the editors is not substantial. The vast majority of data in Wikipedia is not prone to creating controversy or conflict, mainly due to the fact that such information is referenced and cited in many other sources and, in general, is regarding issues not controversial outside Wikipedia.

If there's controversy about any issue, it's not up to Wikipedia or its users to take sides, but to account for them and document the arguments offered by each one. Of course, a minority opinion should be exposed as such, so as not to be presented on equal terms with the majority opinion.

An example of this situation can be found in Carlos Gardel's article. In the Spanish Wikipedia it's mentioned that his place of birth is controversial. Two theories are exposed together with the main arguments in favor of each: one opinion, called *Uruguayan*, affirms Gardel was born in the Uruguayan city of Tacuarembó; the second, or *French*, affirms that he was born in Toulouse, France. Both theories include a large number of sources and are well documented, they are shown in equal conditions and the article does not present conclusions. The English Wikipedia, on the other hand, gives more importance to the *French* theory and only includes a small section of the article to mention the *Uruguayan* controversy. Wikipedia, in line with Wells's utopian project, aspires more to formulate



“a common interpretation of reality” than an idealized search for truth. It’s not about searching for unresolved mysteries, but to show a shared vision: in the Spanish Wikipedia, several editors concluded after discussing at length, and Gardel’s birthplace is shown as discussed, and then both theories are developed. In the English Wikipedia, on the contrary, he is posted as born in Toulouse. Although both articles include information on the controversy, they display it in very different ways.

As can be seen in this contrast, different interpretations of a specific phenomenon correspond to different linguistic communities, as a result of the real-time coordination of a set of individual intelligences, working for the purpose of common enrichment. It seems to be a suitable model of collective intelligence.

Disputes are usually resolved through discussion, searching for a consensus, and it’s feasible to expect that in different versions of Wikipedia the discussions have reached different verdicts. Each article has a section called *Talk* in which the editors, in case of disagreements with regard to the content of the article, provide arguments and try to arrive at a consensus. This consensual version does not necessarily lie in a middle point between the extremes under discussion,

nor does it solve the problem by opting for a position and discarding others, it’s simply a version that is accepted to the extent that it is considered to comply with the Wikipedia policies and guidelines. Voting can resolve some issues, but usually, a consensus is sought.

The arguments present in the talk page (sometimes the term *discussion page* is used) of an article are limited (or should be, since each user is free to write whatever they want, even if they do not comply with the policies) to show data defending not the idea discussed, but the pertinence of incorporating it into the article. The quality of the sources and citations, their reputation, etc., will also be discussed. Of course these are aspects that can lead to heated debates: in some cases, the discussion of an article greatly exceeds the length of the article itself^[16].

Wikipedia articles, along with their histories and talk pages, do not necessarily reflect the highest degree of accuracy, but they embody an invaluable record of the current knowledge status regarding a certain topic, of various points of view, and the level of controversy that can bring forth among the members of the community. It’s an aspect that deserves to be taken into consideration.



4. Conclusions

Wikipedia aims at an ideal that has always been present: the synthetic compilation of knowledge. Unlike other projects with similar aspirations, it has managed to achieve a truly high volume of information that, in addition to increasing day by day, is also accessible to anyone.

A central idea in the workings of Wikipedia is that all its articles were written by anonymous volunteers throughout the world. This eccentricity may lead to some drawbacks and undoubtedly calls into question the quality of its content, but Wikipedia has certain control mechanisms that minimize this problem to the point where some studies mention Wikipedia information is not significantly less

reliable than that of other works with similar characteristics. The way in which *Wikipedia* gathers and displays information can be considered a model of collective intelligence insofar as a sum of individual intelligences collaborating in the creation of a product that transcends the knowledge of its creators. This particularity makes Wikipedia a truly unique project that makes information accessible to everyone and allows each member of the community to be a participant in the construction of knowledge.

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[1] The following year Wells published this essay together with others in a volume entitled *World Brain*, which focuses on the idea of a global encyclopedia.

[2] This and all other quotes from this author are a direct copy of the original in English.

[3] *Creative Commons* licenses provide legal support to legally protect a work without falling under the restrictions imposed by a *copyright*. All Wikipedia contents lie under the *Creative Commons Attribution-Share-alike (CC BY-SA)* license, which implies that the work can be used, shared and modified, as long as the provenance is mentioned and the same type of license is maintained.

[4] The word *free*, from English (*the free encyclopedia*), involves both senses.

[5] The *Print Wikipedia* project (<http://printwikipedia.com/>) produced a digital version of each of these volumes more for conceptual than commercial purposes. Each volume is offered on request at a price of US\$ 80. Buying the full version of 7473 volumes of Wikipedia in paper would, therefore, cost US\$ 597,840. However, the company offers the entire collection for only US\$ 500,000.

[6] A librarian is a user to whom the community has granted

special privileges, such as deleting or protecting pages, or blocking users to avoid vandalism. They are chosen by vote between any editor with more than 50 edits and at least four days old since signing up.

[7] Very active Wikipedians (with more than 100 monthly edits) are slightly more than 500 in Spanish and 3300 in English (*Statistics of Wikipedia-Very active Wikipedians*, 2018).

[8] The *software* is called wiki ('fast' in Hawaiian) for the speed with which each modification can be made.

[9] All changes that visitors make to articles are stored indefinitely in a subsection of each article called *View History*.

[10] Each user has a *Watchlist* where all the recent changes on any article they have chosen to monitor are listed.

[11] Improvement that can be seen, for example, in the progressive increase of articles voted as *Featured* or *good*. These are articles that went through a series of reviews that guarantee their quality. As of November 2018, Spanish Wikipedia has 1123 featured articles and 3241 good articles.

[12] The vast majority of studies conducted to test the reliability of Wikipedia have been focused on its English version, for example, the one published by *Nature* (Giles, 2005). However, the Fundación Española para la Ciencia y la

Tecnología (Spanish Foundation for Science and Technology) made a thorough study on the quality of scientific information in the Spanish Wikipedia (Aibar, E., Minguillón, M., Lladós, J., Meseguer, A. and Dunajcsik, P., 2016).

[13] These rules are known as "The Five Pillars."

[14] There is a page where all the articles with recent changes are listed, so it's very easy to identify them.

[15] *WikiScanner*, developed in 2007, by the then programming student Virgil Griffith.

[16] See, for example, the discussion on the aforementioned Carlos Gardel article.

Prejudice

by Proff. Leticia Marcoff

Since we started working on the “Wikipedia in education” project we have encountered many prejudices regarding this online encyclopedia.

Sometimes the teacher tells the student not to use this tool due to ignorance of the value it has and the possibilities it offers. Here, the appropriate response would be for teachers informing themselves, to know how it works and to internalize it in order to work with it and be up to the requirements of today. This is important because students consult the encyclopedia very often, like it or not, it is the first source to which they are directed when they ask for information, and teachers should not be oblivious to it. Some see it as an “intruder” that has sneaked into the classroom but, in reality, the ideal would be to transform it into an ally, to turn it into another tool to achieve the pedagogical objectives, because its use can be very valuable in education. In the first version of the project interviews were conducted with 43 teachers, all of them knew that their students used Wikipedia, but not one of those educators edited it, they left it aside and believed some of the myths about it. This

information was provided by Fernando Da Rosa in the closing wikiconference of the first edition of the “Wikipedia in Education” project held on November 10, 2014 at the IPA, Montevideo.

Although the project has bore fruit, in this second stage we still find similar positions. Fortunately, this has changed substantially.

Also, there are very clear examples that can be cited, as they reflect the situation that we still find in some of our country's schools.

Several prejudices stand between teachers and this valuable tool.

At the end of a talk on the subject at a meeting, a teacher approached and said: “Teacher, the truth is that while you were speaking I felt identified, I used to tell my students: ‘No Wikipedia’ and, now that I know a little more, I’m ashamed”. Many others commented on similar situations or how little advantage they took of the opportunities provided by this encyclopedia; the collaborative work, the feeling of solidarity, the fact that it can be done in any place with access to the

internet, the possibility of externalizing the work of the classroom, etc.

Sometimes it seems that using Wikipedia as a source of information is something to be ashamed of, even though its use is intelligent and acceptable, and a substantial group of prestigious scientists support it. The thing is how it's used. An article published by two MIT researchers and the University of Pittsburgh shows how Wikipedia is not only one of the most visited sites in the world, but how many times those who visit it are scientists. Many educators also consult it, though they don't always confess it. Many don't say they have queried it for fear of being seen as resorting to the quickest and simplest solution, or considering that it's not reliable, or lacking seriousness. Perhaps it's not to be considered as an only source, but it certainly can be very useful.

Students also note that Wikipedia is their most consulted source.

When a group of teenage students was asked where they were looking for information on a topic, most answered Wikipedia, but one student raised her hand and said "anywhere except Wikipedia", when asked why, she answered that several teachers had told her it was not reliable. This shows that sometimes we the teachers are who often prevent

others from using it. Instead, what should be done is guide its use, give the possibility not only to seek information but also to enrich it with contributions that will surely remain in the memory of the students who make them. It is a practical method of studying and actively learning. It offers the possibility of developing teaching-learning strategies that can be very useful.

It has errors

Among the prejudices, we find that most of those who reject Wikipedia state the presence of errors as a reason.

It's true that Wikipedia has errors, but also that at every moment they are being corrected and if anyone finds an error, anyone can fix it. We have the possibility of increasing the wealth of this impressive work that grows every day and is consulted all the time by so many people.

This encyclopedia does not have as many errors as one might think. There are studies that demonstrate Wikipedia's accuracy, quality, and richness.

In a comparison with the British Encyclopedia, an analysis carried out by the prestigious journal *Nature*, Wikipedia matched the British encyclopedia as far as scientific topics were concerned, the margin of error between both

Karen, thanks for the improvements you made to my article "Southern celestial hemisphere". If you come to Uruguay you'd be more than welcome in our classroom. If I ever go to N.A.S.A. I'll try and look you up. Regards



publications is not very wide, the encyclopedia entirely created by Internet users could be considered almost as rigorous as the *Encyclopedia Britannica*, according to the study (Giles, 2005).

The British journal established a committee of experts to compare articles of both encyclopedias without knowing which of the two the articles came from. The result is surprising, taking into account the way the encyclopedia is created. However, we must remember that Wikipedia has a review and supervision system through administrators who perform different functions of moderation and maintenance of the system. It is possible to block the editing of an article, prevent a specific user from using the system, etc. Wikipedia also has relevant policies specifying what is allowed and what not as content. We must study its five pillars to understand how we can contribute. These define the character of the encyclopedia.

By editing and creating articles anyone can see how quickly they are reviewed, added to or even deleted. Here's an example of something that happened recently and shows the speed with which newly published articles are revised or corrected: seeking information about impressionist painters - a subject which I teach in some courses- I noticed that some Belgian painters were still in red, meaning there was no

information about them. Anyone can contribute by clicking on the word to create, from there, an article; so, I decided to write about one of them; starting with the French Wikipedia, where the painter did have an article. I made the translation, included pictures, etc., and in a few hours I had done it. Right after publishing, I closed Wikipedia and checked my mail. It had not been a minute since the publication when I already received a notification from a wikipedian. Not even a minute! He told me my article lacked references or citations. As the original article in French did not have them -though I did include several links- I looked for them in the English Wikipedia, and I noticed the article about this painter had never had references, citations, or bibliography since its creation in 2014. My article has not been deleted, it only cites a request to include references and citations, because, in spite of the links, which give a certain seriousness to the article, facts must be verifiable.

References, citations and bibliography are very important because they grant verifiability to the encyclopedia. Primary sources must be included for everything written, that is, it must be said where the information has been extracted from, so that anyone can verify and confirm its authenticity. What is interesting and quite impressive is the response speed: in less than a minute my first article had already been read

and challenged, also, the user who wrote me had also made a small contribution by adding information. This immediate intervention shows that an error or an inopportune contribution are dealt with almost immediately. It can also happen that a brief article created with very little available information can become much more extensive and complete.

Anyone can edit

Another reason we often hear for dismissing Wikipedia is that anyone can edit it. Yes, in theory, although not everyone does. There are people and experts around the world correcting, appending information, complementing the different articles that make up Wikipedia. There's an unmatched reason to use it, we can be an active part of the incessant process that is Wikipedia, modifying or adding data or information that we find relevant. Improving the quality of articles is one of the main objectives of editors. It is a precious resource in which we can be protagonists. Our contributions can be useful to millions of people around the world, there's a feeling of solidarity, commitment and satisfaction, because it directly involves us and allows us to be part of a very rich and complex system without borders, a world community offering its time and effort for the benefit of all.



It's necessary to keep in mind that any user committing "vandalism" is blocked. It's a fact that there are people who participate in bad faith, as it happens in any part field and in all the different activities we can imagine, but there's a control on part of the community itself. They take care of it, because everywhere and at all times articles are being revised and improved upon.

Students can also be involved in this process. Not only for using the resources available, both for teachers and students, but also to improve and add information, within the extent of their possibilities.

Copy/paste

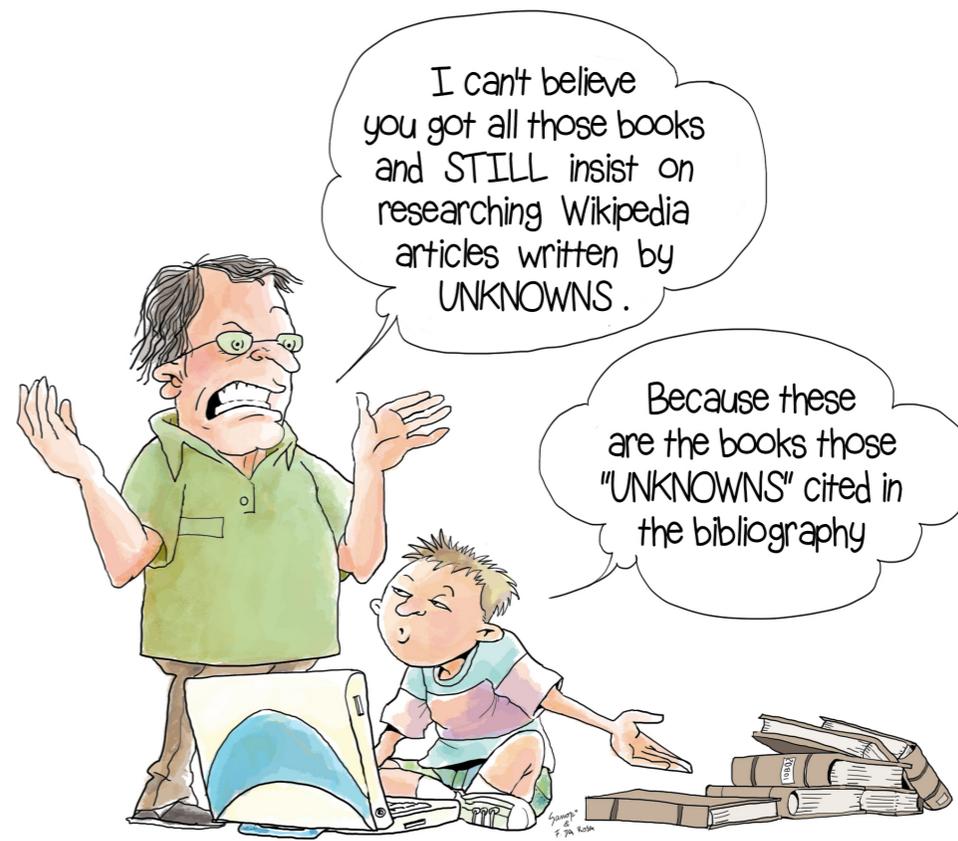
There are also those who avoid using Wikipedia because anyone can “copy and paste” it easily. While it’s true that it allows the textual copying of a document, as well as other internet sources, at this point it’s us the teachers who should question whether what is requested from the students can be answered by copying information. For example, to learn a statement, just reading and learning it from memory might be enough, but, if that’s not what you are trying to achieve, then teachers should rethink the question, reformulate it, so that it is not enough to copy existing information, students must read more carefully, selectively, checking other sources before turning in an answer.

This reflection or idea was first suggested in the closing stages of the first Conference regarding the “Wikipedia in Education” project. The venue was the IPA, and was organized and lectured by Da Rosa. It was also proposed by Mag. Natalia Correa in the conference “Wikipedia in Education” on September 8, 2017 in the Assembly Hall of the Executive Tower of the Presidency of the Republic, in Montevideo. Obviously it’s essential that the teacher knows and manages Wikipedia. It can be taken, for example, as a first place to look for information, and can be later compared with other

sources, and see what differences there are between it and a book or other means of information. Prejudices prevent the use of a valuable resource, such as the largest online encyclopedia, removing the possibility of multiple pedagogical practices that could possibly enrich the classrooms and education in general. It’s imperative, as teachers, that we know how to take advantage of this tool, how to get the most out of it, how to value the usefulness that it offers us, and how to include it into our proposals for teaching when the opportunity is given.

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Anexos

Annex 1

Tutorials and videos used as a complement, in the “Wikipedia in Education” project:

Conference “Wikipedia in Education”, lecture by Fernando da Rosa (in spanish, subtitles available)

<https://www.youtube.com/watch?v=-GRm7TOOlt0>

Conference «Wikipedia in Education», lecture by Ángeles Soletic

https://www.youtube.com/watch?v=PFe_22EMoKE

Create account in Wikipedia (in spanish)

<https://www.youtube.com/watch?v=yIWhu5XWixU>

How to categorize yourself in Wikipedia (in spanish)

<https://www.youtube.com/watch?v=l25jmiE7ysA>

Correct spelling and carry out disambiguations (in spanish)

<https://www.youtube.com/watch?v=6VHY5aEtZKo>

Upload a photo to Commons and use it in Wikipedia (in spanish)

<https://www.youtube.com/watch?v=0mqi1e5nKt4>

How to proceed in the case of translations (in spanish)

<https://www.youtube.com/watch?v=jq23r4rG2cl>

How to include references (in spanish)

<https://www.youtube.com/watch?v=hQJNbl6srAU>

How to set preferences (in spanish)

<https://www.youtube.com/watch?v=IHCtrbfljhE>

How to work with disambiguations (in spanish)

<https://www.youtube.com/watch?v=YUU7W6uqiKE>

Copyrights and the Internet, lecture by Dr. Patricia Diaz. (in spanish)

<https://www.youtube.com/watch?v=CKE5K6CJ50g>

Annex 2

Good articles (Wikipedia, 2017).

What is a good article? Way to nominate a good article / list
<ol style="list-style-type: none"> 1. Create a new entry 2. Editing 3. Write a brilliant article 4. Examine the evaluation criteria: <ol style="list-style-type: none"> a. if it is an article b. if it is in a list 5. Submit a nomination 6. Attach an article to WP:GA

A good article has the following attributes:

1. Well written:
 - a. the prose is clear and concise, and the spelling and grammar are correct; and
 - b. it complies with the manual of style guidelines for lead sections, layout, words to watch, fiction, and list incorporation.

2. Verifiable with no original research. This means that: it
 - a. it contains a list of all references (sources of information), presented in accordance with the layout style guideline;
 - b. all inline citations are from reliable sources, including those for direct quotations, statistics, published opinion, counter-intuitive or controversial statements that are challenged or likely to be challenged, and contentious material relating to living persons—science-based articles should follow the scientific citation guidelines;
 - c. it contains no copyright violations nor plagiarism
3. Broad in its coverage:
 - a. it addresses the main aspects of the topic; and;
 - b. it stays focused on the topic without going into unnecessary detail (see summary style).
4. Neutral: it represents viewpoints fairly and without editorial bias, giving due weight to each.
5. Stable: it does not change significantly from day to day because of an ongoing edit war or content dispute.

6. Illustrated, if possible, by media such as images, video, or audio:
 - a. media are tagged with their copyright statuses, and valid fair use rationales are provided for non-free content; and;
 - b. media are relevant to the topic, and have suitable captions.

Immediate failures

- An article can, but by no means must, be failed without further review (known as a quick fail) if, prior to the review:
1. It is a long way from meeting any one of the six good article criteria
 2. It contains copyright violations
 3. It has, or needs, cleanup banners that are unquestionably still valid. These include `{{cleanup}}`, `{{POV}}`, `{{unreferenced}}` or large numbers of `{{citation needed}}`, `{{clarify}}`, or similar tags. (See also `{{QF-tags}}`)
 4. It is not stable due to edit warring on the page

In all other cases, the nominator deserves a full review against the six criteria from the reviewer. For most reviews, the nominator is given a chance to address any issues

raised by the reviewer before the article is failed. Often the nomination is brought up to standard during the review.

What cannot be a good article?

- Stand-alone lists, portals, sounds, and images: these items should be nominated for featured list and featured picture status, if applicable.
- Disambiguation pages and stubs: these pages cannot meet the criteria.
- Featured articles: a good article loses its status when promoted to a featured article. Accordingly, demoted featured articles are not automatically graded as good articles and must be reassessed for quality.

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