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Universal System of multilingual digital translation that incorporates technology for people with visual or hearing disabilities

Sistema universal de traducción digital multilingüe que incorpora tecnología para personas con discapacidades visuales o auditivas

ARTÍCULO DE INVESTIGACIÓN

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Resumen

Este artículo propone y estructura las bases para la creación de un traductor digital que incluya voz, texto, lengua de señas, sistema braille y tecnologías asociadas. Los elementos a partir de los cuales se realiza esta combinación de sistemas análogo-digitales son personalizados debido a las múltiples variables que deben ser consideradas frente a las realidades humanas. El objetivo es superar las barreras idiomáticas y del diseño universal existentes de traductores digitales. La metodología es deductiva ya que las implicaciones se basan en algoritmos ejecutados en la Internet para modelos industriales y de utilidad que procuren incorporar nuevas tecnologías en productos y servicios. El entorno digital se caracteriza por una compleja red de plataformas complementarias y de contenido múltiple que debe diseñarse con sistemas adaptados para personas con capacidades distintas. Este estudio es una base teórica, única en su género que integra modelos comunicacionales de realidad virtual y aumentada.

Palabras clave: discapacidades; traductor multilingüe; tecnología e industria; accesibilidad universal.

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Abstract

This article proposes and structures the basis for the creation of a digital translator that includes voice, text, sign language, Braille and associated technologies. The elements from which this combination of analog-digital systems is realized are customized due to the multiple variables that must be considered in the face of human realities. The objective is to overcome the existing language and universal design barriers of digital translators. The methodology is deductive since the implications are based on algorithms executed on the Internet for industrial and utility models that seek to incorporate new technologies in products and services. The digital environment is characterized by a complex network of complementary and multi-content platforms that must be designed with systems adapted for people with different capabilities. This study is a unique theoretical basis that integrates virtual and augmented reality communication models.

Keywords: disabilities; multilingual translator; technology and industry; universal accessibility.

1. INTRODUCCIÓN

According to the (ONU, 2018) World Health Organization, it's estimated that about 1.3 billion people living with some form of visual impairment, between 110 and 190 million have mobility impairments; whereas the (ONU, 2020) United Nations replicates the information of the World Federation of the Deaf, where it asserts that there are approximately 72 million deaf people in the world and are used by more than 300 different sign languages. By considering these kinds of realities and needs that people require, this means that the design of adaptive technologies for people with disabilities to be contemplated in engineering in all its areas in the present and future generations; accessibility to renewable, healthy and inclusive technologies are the challenges that demand the living conditions of the world's citizens.

The processes of the industrial revolution modify the world and people's lives. The cities of the future must contemplate social security systems, corporate welfare systems and for the workers that compose them, rights to decent services, dignified retirement pensions, etc.; otherwise, this type of assimilation occurs what is created are underworld that alter a social order.

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Industrialization turned the environment and the lifestyle of people into polluted spaces of multiple forms; in short, the premise with which this article starts is that parallel to the development of cities there must be the development of the lives of the people who inhabit them. This humanistic spirit is the expression where projects are born that adapt to specific needs of security, physiology, economics, etc.; in accordance with the requirements of each individual.

The aforementioned reasons allow to explain how the creation of this translator can influence the manufacturing, chemical, steel, automobile, food, textile, pharmaceutical, arms, computer, mechanical, and energy industries, among others. Because what is being proposed are systems of artificial intelligence that generate access inclusive to more people with disabilities, as in the constitutions of most countries endorse the rights and the fundamental principles of the people, this artificial intelligence should be extrapolated to social studies ranging from the global learning of the proper use of things that incorporate these new technologies, through the institutional and democratic pedagogy of teaching the new communicational models that arise, to the incorporation of the new elements that need to be added in the things that people use in everyday life.

This last point must be emphasized, since the ultimate goal is a multilingual translator for the disabled, which almost completely incorporates the complex of the human corpus that we use to communicate. Despite the fact that the translator is one of the many final results that can be shown in the future, in the same process of creating this technology there will be researchers, other inventions and findings that can be attached to components that people with disabilities can master in their daily lives. In short, we live in a world of scientific findings which we make use of to have an adequate quality of life, it must be emphasized that companies dedicated to the manufacture of artifacts must add strategic points to their assembly lines and production lines access to employment for people with disabilities, no longer in remote and disproportionate places, rather new industries must be redefined and must be built considering this new paradigm.

That is, the machines that create other machines, the programming languages that create the new design interfaces must already include this revolutionary gaze because millions of people are living with some type of disability, and it is the obligation inherent in the states and the republics to abide by the laws that are born of those ideals of equitable societies, in this perspective

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idyllic a way to contribute to this purpose is the investment towards this type of projects that are born in principle with this ideal.

2. METODOLOGÍA

Texto According to (Internet World Stats, 2020) Internet World Stats, a world statistics website that collects data from the UNITED NATIONS, the INTERNATIONAL UNION of TELECOMMUNICATIONS and official entities recognized worldwide; it shows data that until September 30, 2020 there are almost 5 billion Internet users, but it is curious to know that no little more than 5% of the languages of the world are represented on the Internet. Languages, dialects etc.; are innate things in people and that technology still does not contemplate when it comes to providing equitable access for people from different regions of the globe, that is why this translator proposal would help to contemplate a space for study and scientific development that would shorten this barrier in this generation, it is possible that if governments consider the use of this system as a solution in less than a decade, educational centers around the world would welcome the possibility of adding learning and development of this system in their curricular programs in for a more inclusive world in real life and digital spaces.

To put in context the main idea raised is that this translator would allow, for example, people with visual or hearing disabilities of any nationality, for example from the American continent, to communicate with disabled people from another part of the planet. The examples and variants that appear are multiple, and it is considered that there could be trillions of possibilities in which this program already concluded could assist. Two specific examples will be presented below. Figure 1 is used to exemplify how a deaf person who communicates through sign language in this case Ecuadorian will communicate effectively with another deaf person who uses Russian sign language or blind person who uses braille systems that must be incorporated into adaptable devices for text and speech in turn. The following example might sound like an idyllic tale of sorts, but it will be put up for the readers' consideration. In an online conference delegate from different countries, with or without disabilities, will have an effective conversation.

One of them is blind and speaks Spanish, another is deaf and communicates through Russian sign language, another also communicates with English sign language, a fourth is of Asian origin and communicates with Chinese sign

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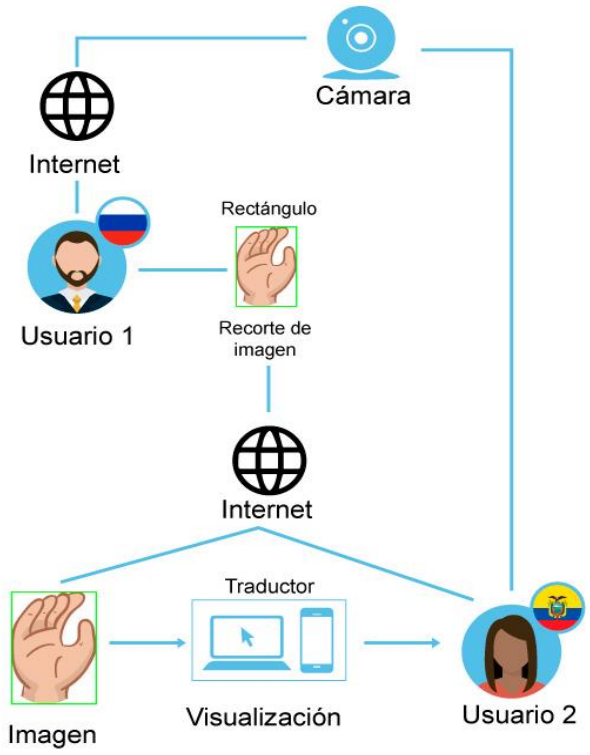
language; it could also include people who do not have disabilities but who speak other languages such as Hindi or Arabic; this translator must be designed so that if this type of specific case occurs, people can naturally communicate their ideas and thoughts. Once again, it is emphasized that this proposal, which must already be analyzed by the governments of the world and interested companies, is possible and concluded with efficiency, effectiveness and in record time.

It is enough to enter and read everything that the companies that develop inclusive systems have achieved on these issues. Companies like Google, Nintendo, Yandex, Facebook, etc.; should analyze the possibility of designing this translator because it could blur the study in programs and systems that solve other types of problems, as mentioned above, the ultimate goal is the creation of this translator for people with visual and hearing disabilities, but in the process future research is expected to help resolve difficulties in the social areas mentioned at the beginning of this article.

Figure 1.

Design of a possible combination between persons with disabilities of different nationalities.



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(UNESCO, 2021) UNESCO says that cultural diversity and multilingualism on the Internet have a key role to play in fostering pluralistic, equitable, open and inclusive knowledge societies. Almost as usual the word that refers to inclusiveness, in the sense for people with disabilities, goes to the end, it goes in addition and sometimes it is not of vital importance, in a certain sense literary demagoguery conceals this effect when agreements are drawn up and executed in favor of those who require diverse forms and systems in society.

This article seeks to be part of the thousands of publications that are made about these inventions that are of social transformation. A social invention should try to put the patent issue aside as much as possible. This is to say that there are multimillion-dollar investments to create universal multilingual systems; investments where the studies and development of artificial intelligence is the raw material to develop constant revolutions. An example of this is the technology created by Facebook, but despite being an innovation of an insane measure, it would form only a part of what the creation of this universal multilingual translator designed to contemplate visual and hearing disabilities implies. Facebook not only dominates and leads the international machine translation competitions of the WMT (FACEBOOK 2020), but also sets an example as its open-source system called the M2M-100 will exceed 15 billion linguistic parameters in a few years.

The Egyptians became an empire when they controlled the fluvial flows and natural cycles of the Nile River, when the alternating current was discovered and it was transformed and diversified, it supposed a global evolution to crucial points of implosion due to environmental disregard. History tends to repeat itself; at one-point characters like Edison, Tesla, Westinghouse, among others, appeared; and these were the ones who designed a world that works with and by electricity.

It is clear to mention that this paragon is used since they were business models that happened in the past, however, now the dominance of these multilingual systems and artificial intelligence is crucial because those who achieve these objectives will dominate the markets until the next millennium and it is possible much more. In the history of automobile companies, Preston Tucker should be mentioned since the designs he proposed included security measures whose concept was to protect the physical integrity of people. Tucker blamed the large automotive companies because they omitted protection designs since their concern was to sell more cars, but those cars were not safe, there were no

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protection guarantees for those who drove; this pioneer of industrial safety introduced seat belts, windshields in his prototypes. Tucker combined the technological developments of the moment plus the element of safety that was omitted to create an essentially safe car. In short, Tucker designed and built what for his time meant the car of the future, in the same way that companies still ignore that people with disabilities need technology that is low-cost, accessible, safe and generates returns for investors.

The group of companies that start their new industrial platforms contemplating multilingual systems for people with disabilities will not only have an open market for innovation, but will also be responsible and their investments will have social and ethical coherence with the present. For the people who live between that abysmal gap in the world of silence and sound, we are no longer in the era where sound inventions that turned sounds into electricity had to be dealt with; Alexander Graham Bell left the way to now think of a global world of ideas that includes people with disabilities; Bell is not only a pioneer in the world of telecommunications, but also comes into collation since he developed a self-regulatory mechanism in which the company finances inventions while the innovations they provide allow increasing the profit margins of the investing company. Individual initiatives were characteristic of Western societies, while Eastern cooperativism extends these opposite poles in the classic definition of business management as a generator of progress. This section of the conception of the business field should include the name of Henry Ford since he put together a series of elements that were the work of many years on the part of his fellow inventors: he put together the engine, the chassis, the axle, the tire in short Taylor's theory, the assembly line, itself: industrial cooperativism. To this extent, what this translator needs is this same recipe, to unify the utilities of the existing devices in a multifunctional device with the theories and scientific advances in the digital areas and with the available platforms.

3. RESULTADOS

The unseen worlds and non-verbalizable worlds are millenary, unfortunately with the exception of the various arts, which have been allowed to cross the borders of silence, there are other subjects of study based on reason and logic that do not run projects whose main objectives should be to foster inclusion in different latitudes of the globe; these marginalized worlds so far are not given the equal access they require, much less to those who live with some type of disability and who are part of our apparently democratic and inclusive societies.

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It is curious to mention that art allows these silences to become as loud as they can become tremendously silent; since epistemologically we can refer to art as a guide that leads deep ideas, of such silences and natural things; that those who ascribe these meanings warn of a more dignified and secure world for civil society.

The unseen worlds and not verbalizable are millenary, unfortunately with the exception of the various arts, which have been allowed to cross the borders of silence, there are other areas of study based on reason and logic that do not carry out projects whose main objectives should promote inclusion in different latitudes of the globe; to these marginalized worlds so far, the equal access they require is not offered, much less to those who live with some type of disability and who are part of our apparently democratic and inclusive societies. It is curious to mention that art allows these silences to become as loud as it can become tremendously silent; since epistemologically we can refer to art as a guide that leads deep ideas, of such silences and natural things; that those who ascribe these meanings warn of a more dignified and secure world for civil society. Perpetuating a historical look through literature will lead us to understand that technology is a further extension of art in a broad sense of the word, for this reason is that a reflection is dedicated to it. Art and technology can be compared since their nature is innovation, they are things that the human being appropriates and, in that process, diversifies them to bypass their history, memory, identity, etc.

The historical recount could begin in the most remote years of the history of humanity, however on this occasion we refer to ideograms and their curious use in this time of humanity; it will be useful to provide the necessary details to formulate the sufficient reasons that will lead large investors to gather the ideal group of professionals, who will be able to design even more inclusive digital spaces and who generate certain guidelines on how to create, establish, socialize and visualize places and forms that they do not discriminate or ignore those who live in a reality of difficult access to services and things, which although in most constitutions its endorse that it does not happen, but in reality this happens partially or completely, since linguistic texts of these supreme law-bearing books, its assume realities of utter disadvantage for the disabled and their like. The recommendations made by the [6] World Health Organization are that people with disabilities should be encouraged to develop their full potential and that they are given equal opportunities to achieve it.

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The pictorial arts left us the bases to exemplify how the simplest lines can have alternate meanings. At present, technology is useful to us to generate digital systems where a series of variants converge to generate inclusive digital systems. To achieve this, the large translation technology industries consider in their databases the alphabets and phonetic alphabets that are required in the first instance to create inclusive translators. In other words, we are arriving at a time where all these contributions of large and small technologies already developed must come together to consider the development of a digital platform that can translate sign language, the phonetics of as many languages as possible and the configurations for people who use braille as a means of communication. In short, what is proposed is a multilingual translator but not only of voice and text, sign languages from different parts of the world must be included and start generating the ideal systems to include braille in this multidirectional and inclusive system.

4. DISCUSIÓN

Just as the strokes in ancient times were subject to determining how the lines were represented, now it is possible to predict body movements to generate linguistic interpretations where historical and cultural transitions are exchanged. These mass phenomena allow producing a virtual platform to be profitable and generate not only economic benefits. When forms evolved, paper, ink and color were the distinguishing features par excellence; however, all the generations that coexist together in the current time have adopted an attitude that hardly changes the effort required to develop this type of technological development.

By itself, the role of advertising and the market economy will not greatly revolutionize, what can happen is that systems are extrapolated to the new platforms, which in principle must generate identity and these must have their own interfaces depending on where you are. The generation of these platforms will re-signify the communication models with which we understand the world. The risk and noise factors in the outdated communication models will have in themselves a component that was always involved, but which was given minimal importance since compared to the population that is not excluded, it did not resort to an urgent need to be studied. The details, the personalization, the innovative is what takes the guideline, the calm is not part of the computer industries because these are the ones that modify the lifestyles of people and are to which they must be transformed from the genesis of the same. There are civilizations whose film compositions and lifestyles lead to the details of shapes

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and textures. There are those in which the icons that were generated over time cannot be taken as a mere literal translation and the algorithms are a means of semantic predictability. Sounds are the very essence of philosophical production that leads to correlate other cultures.

Correlating sounds, gestures, forms and as many languages as possible, thus perpetuating an integral agreement of respect for the traditions, history and culture of the peoples are the principles of this project. An infinite amount of resource is required, an investment in decades of study to be completed but that will leave a perennial mark on the timeline that is built day by day. The historical disorder that man produced with nature is part of this monitoring that this company demands, ecology and nature must be integrated into the construction of this surreal world. When the idea of a system that encompasses everything arrives, doubts arise and one wonders if the end of the purpose would really be the whole of everything, since man is an insatiable being and needs to create other imaginary worlds. When a cinematographic metaphor of a dream within another was achieved, only this art could for the moment transport us to dream places, but how we located all this information from all these micro and mega worlds in one place. Well, the solution is given to us by those who surf in creativity to make these spaces of beauty real for those who can contemplate them. Video games are an example of this, all those who configure virtual life schemes open the windows so that the air of creativity leads designers to solve communication problems.

5. CONCLUSIONES

Texto Literature is not alien to this process of new communicational paradigms, in the history of humanity a clear example of how to include a millenary history, including text and voice in strokes and also without leaving the syntagmatic variations developed by the Japanese; the higarana, katakana and romaji were the human creations that through the sinograms gave shape to the difficult task of making this innate process of the human being perennial by leaving history reflected in specialized linguistic systems.

This epistemological process seems to be an escape that instead of analyzing the real way of programming and designing this system supposes a false idea of avoiding circumstantial things; in no way is this an aphorism since this in sum is image, sound and text at the same time. Literature would play in its splendor with the ephemeral nature of time retention where those moments of shapes

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and colors were captured; and that is the very purpose of this inclusive proposal. This new communicational model must go through several approaches of communication theories. The instrumental views of the mathematical theory of communication will be modified in its linear processes since the paradigm underlying the proposal makes that in front of this linearity it is necessary to contemplate the processes with algorithms and artificial intelligence, this characteristic makes possible feedback and greatly modifies the linear conception of the theory. Functionalist theories must be opened up in the current means of medication. When the masses are studied and united in something that is programmed by audiovisual preferences, they lead to the segmentation of content that does not reach excluded audiences despite the interests that could be shown in those issues.

The adaptations of materials and the use of them in favor of access to information for people with disabilities must be coupled with digital models of artificial intelligence. This proposal, as well as those already existing, suggests a conjunction of all alternative possibilities to unite technology from many parts of the world. Research projects and others must set aside their regional or continental character, this trade barrier must be eliminated when dealing with agreements in favor of the creation of a global platform of inclusive systems. By this I mean that the current proposal will eliminate communication barriers that we had in the past. This inclusive multilingual translator will generate the corresponding variants for specific areas such as health, education, sports and more. Almost the majority of social areas will be part of the reception of benefits that are projected through the design of this immense digital network.

It should be emphasized that if it does not join in the majority of existing technologies, this project will become part of something that in the future will be one more piece of a system that must be constantly restructured. Commercial benefits are an inherent reality of this, manuals and hundreds of commercial proposals can be processed that will use the technology to be developed. However, from the perspective of paradigm and generational change, all this would allow a structural transformation to be carried out in education. It should be emphasized that this is a social invention, despite the fact that multinationals make use of their patents to innovate with the changes that are required in the future; the technological race to create a fairer world for people with disabilities is giving results to think that in its beginning it was not thought so. The proposal that is presented is that from now on we look at new communicational models, structural changes in education and the economy. It seemed that this proposal

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sidesteps in the imagination and a perfect dream that the letters make possible, however, all this is already happening. The innovation of the proposal is that language and Linguistics barriers can be greatly shortened for blind, deaf people, people who in some way will be able to benefit from the alternatives that the system would offer.

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