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Universidad del Valle Bolivia

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中国生物多样性保护与绿色发展基金会 China Biodiversity Conservation and Green Development Foundation

JLASC

Journal of Latin American
Sciences and Culture

"JLASC promotes scientific knowledge for the construction of cultural values, the exchange of knowledge, the sharing of information, in lock-step with the construction of a community and shared future."

Prof. Dr. Marco A. Cabero Z.
Editor-in-Chief
Journal of Latin American Sciences and Culture (JLASC)

"JLASC is open to the world. Popularizing science can contribute to the development of society and improve the well-being and well living of people."

Editorial Team
Journal of Latin American Sciences and Culture

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Journal of Latin American Sciences and Culture (JLASC)
Aims and scope

Introduction

The Journal of Latin American Sciences and Culture (JLASC) is an international journal seeking to promote the scientific landscape in Latin America by pushing conventional boundaries to include issues, perspectives, and methods relevant to education, science, technology, and culture. JLASC thus intends to truly internationalize these areas through the journal's global reach.

The JLASC seeks to lay bare not only the diversity and richness of Latin American scientific issues, but of perspectives, research methods, and evidence of the many creative crossflows of influence that exist between Latin America, Sino-American cultures, and other peripheries. Through JLASC, education, science, technology can be powered by wide-ranging ideas from many cultures and research areas.

The JLASC welcomes submissions that focus on empirical research, theoretical analyses, or literature and book reviews. Proposals for special issues are actively encouraged and should be discussed with the Editor-in-Chief or a member of the Senior Editorial Team of the journal.

The JLASC promotes scientific literacy, the popularization of science, media and information literacy (MIL) following the guidelines of UNESCO The JLASC also promotes the exchange of knowledge and the dissemination of information for the development of society through science, technology, innovation, education, and culture. Special attention is given to the use and promotion of Spanish for these purposes, as the Cervantes Institute is one of our collaborators. We also count on the support of Chaoxuan Intelligent Research Institute and Elektro High Tech Co. Ltd for the promotion of science and technology and their advancement that can be beneficial for the world.

Editorial policies part one

JLASC is a peer-reviewed journal published in English, Spanish and Chinese by Universidad Privada del Valle (UNIVALLE), Bolivia. The journal only publishes manuscripts that meet world-class standards of global academic publications. These must follow the guidelines provided on the website in the instructions for authors.

Those submissions deemed by the Editor-in-Chief and the Senior Editorial Team to meet world-class standards will be published regardless of authors' ability to pay the Article Publication Charges (APCs), which are US$600/£460/€530. Waivers for APCs can be requested by all authors regardless of background and will be appraised by the Publisher and the Editors based on individual circumstances and the ability to pay. Those who are truly unable to afford the APCs will receive full waivers. This includes many Latin American scholars, as well as graduate students, independent researchers, and researchers from around the globe who do not have grants or other funds to cover publication costs.

Authors must submit their manuscripts through the UNIVALLE website, Website Customization by: OpenJournalSystems.com (journal homepage: www.journalasc.org and submission site: www.revistas.univalle.edu), and receive an acknowledgment of submission. The Editorial Team assesses the manuscript and the author is notified that the manuscript has either been rejected or that it is to be sent out for double blind external review.

Peer Review Policy

All submitted manuscripts are subject to initial appraisal by the Editors, and if found suitable for further consideration, to peer review by independent, anonymous expert referees. The Editors are supported by an active Editorial Board and an International Advisory Board. All refereeing is double blind. Submissions can be made online at: editorial@journalasc.org

Publishing Ethics

The Journal adheres to the world-class standards of publishing ethics, with rigorous processes in place to ensure this goal is achieved. Our publisher, Universidad Privada del Valle, utilizes CrossCheck for all Journals. More information on our ethical standards and policies can be found in www.journalasc.org.

Read the Instructions for Authors for information on how to submit your article in https://journalasc.org/author-instructions/

Journal information

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Electronic Journals Library (EZB)
Finnish Publication Forum (Julkaisufoorumi)
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Editorial policy's part two

About this topic

The following policies apply to the *Journal of Latin American Sciences and Culture (JLASC)*. Where the journal is hosted at Universidad Privada del Valle (UNIVALLE) on behalf the Andean Road Countries for Sciences and Technology. Please read these policies in full before submitting your article, to ensure you've correctly followed all the requirements.

Affiliations

You and your co-authors must list all relevant affiliations to attribute where the research or scholarly work was approved and/or supported and/or conducted. For non-research articles, you must list your current institutional affiliation. If you have moved to a different institution before the article has been published, you should list the affiliation where the work was conducted, and include a note to state your current affiliation. If you do not have a current relevant institutional affiliation, you should state your independent status.

Appeals and complaints

The Journal of Latin American Sciences and Culture follows the Committee on Publication Ethics (COPE) guidelines on appeals to journal editor decisions and complaints about a journal's editorial management of the peer-review process. We welcome genuine appeals to editor decisions. However, you will need to provide

strong evidence or new data/information in response to the editor's and reviewers' comments. Where you, as an author, wish to comment on aspects of the journal's editorial management please contact us at: editorial@journalasc.org

Authorship

Listing authors' names on an article is an important mechanism to give credit to those who have significantly contributed to the work. It also ensures transparency for those who are responsible for the integrity of the content. Authors listed on an article must meet all of the following criteria:

- Made a significant contribution to the work reported, whether that's in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas.
- Have drafted or written, or substantially revised or critically reviewed the article.
- Have agreed on the journal to which the article will be submitted.
- Reviewed and agreed on all versions of the article before submission, during revision, the f inal version accepted for publication, and any significant changes introduced at the proofing stage.
- Agree to take responsibility and be accountable for the contents of the article and to share responsibility to resolve any questions raised about the accuracy or integrity of the published work.

The journal editor will not decide on order of authorship and cannot arbitrate authorship disputes. Where unresolved disputes between the authors arise, the institution(s) where the work was performed will be asked to investigate. Consider details such as:

·Corresponding authors
·Changes in authorship
·Assistance from scientific, medical, technical writers or translators
·Assistance with experiments and data analysis
·Acknowledgments
·Author name change policy

Citations

Research and non-research articles must cite relevant, timely, and verified literature (peer-reviewed, where appropriate) to support any claims made in the article. You must avoid excessive and inappropriate self-citation or prearrangements among author groups to inappropriately cite each other's work, as this can be considered a form of misconduct called citation manipulation. If you're the author of a non-research article (e.g. a Review, Opinion, etc) you should ensure the references you cite are relevant and provide a fair and balanced overview of the current state of research or scholarly work on the topic. Your references should not be unfairly biased towards a particular research group, organization or journal. If you are unsure about whether to cite a source you should contact the journal editorial office for advice.

Competing interests

You and all of your co-authors must declare any competing interests relevant to, or which can be perceived to be relevant to the article. A competing interest can occur where you (or your employer, sponsor or family/friends) have a financial, commercial, legal, or professional relationship with other organizations, or with the people working with them which could influence the research or interpretation of the results. Competing interests can be financial or non-financial in nature. To ensure transparency, you must also declare any associations which can be perceived by others as a competing interest.

Corrections, expressions of concern, and retractions

Sometimes after an article has been published it may be necessary to make a change to the Version of Record (VoR). This will be done after careful consideration by the Editor who is also supported by Universidad Privada del Valle (UNIVALLE) and the Andean Road Countries for Science and Technology to ensure any necessary changes are done in accordance with guidance from the Committee on Publication Ethics (COPE). Any necessary changes will be accompanied with a post-publication notice which will

be permanently linked to the original article. This can be in the form of a Correction notice, an Expression of Concern, a Retraction and in rare circumstances a Removal. The purpose of this mechanism of making changes which are permanent and transparent is to ensure the integrity of the scholarly record. Read our full policy on corrections, retractions, and updates to published articles.

Data availability and deposition

Universidad Privada del Valle (UNIVALLE) supports a number of open data initiatives and offers a suite of data-sharing policies. Contact us at: editorial@journalasc.org

Data repositories

A data repository is a storage space for researchers to deposit data sets associated with their research. And if you're an author seeking to comply with a journal data sharing policy, you'll need to identify a suitable repository for your data. Read our guide to choosing a data repository which includes some generalist repositories you may wish to consider.

Community-endorsed public repositories

Where community-endorsed mandates exist for submission of data to public repositories, authors should submit the datasets to the appropriate repositories and provide the accession numbers (where available) in the paper. Examples of repositories community-endorsed public repositories include:

Data type Suggested repositories

DNA and RNA sequences Genbank
DNA and RNA sequences EMBL Nucleotide Sequence Database (ENA)
Gene expression Gene Expression Omnibus (GEO)
Gene expression ArrayExpress
Genetic polymorphisms dbSNP NCBI
Genetic polymorphisms dbVar NCBI
Genetic polymorphisms European Variation Archive (EVA)
Linked genotype and phenotype data dbGAP NCBI
Linked genotype and phenotype data European Genome-Phenome Archive (EGA)
Protein sequences Uniprot
Proteomics data PRIDE
Proteomics data PeptideAtlas
Metabolomics data Metabolomics Workbench
3-D printable models NIH 3D Print Exchange
Neuroimaging data OpenNeuro
Neuroimaging data NeuroVault
Macromolecular structures Biological Magnetic Resonance Data Bank (BMRB)
Macromolecular structures Electron Microscopy Data Resource (EMDB)
Macromolecular structures Worldwide Protein Data Bank (wwPDB)
Macromolecular structures RCSB Protein Data Bank (PDB)
Crystallographic data Cambridge Crystallographic Data Centre (CCDC)
Crystallographic data Crystallography Open Database (COD)
Earth and environmental science data PANGAEA
Earth and environmental science data NERC Data Centres
Earth and environmental science data World Data Center for Climate (WDCC)
Earth and environmental science data Knowledge Network for Biocomplexity (KNB)
Earth and environmental science data EarthChem
High Energy Physics Data HEPData
Archaeology Data Archaeology Data Service (ADS)
Paleontology Data Paleobiology Database
Humanities outputs CORE (Humanities Commons)

Custom computer codes, software tools, and mathematical algorithms

To enable full assessment of submissions, you must make available on request to Editors and/or reviewers any custom computer codes, software tools, or algorithms which have been used to generate the results and conclusions that are reported in your manuscript.

Designations of territories

Universidad Privada del Valle (UNIVALLE) respects its authors' decisions regarding the des-

ignations of territories in its published material. Universidad Privada del Valle's (UNIVALLE) policy is to take a neutral stance in relation to territorial disputes or jurisdictional claims in its published content, including in maps and institutional affiliations. Where a journal is owned by and published on behalf of the Andean Road Countries for Science and Technology, Universidad Privada del Valle (UNIVALLE) will take into account that Andean Road Countries for Science and Technology's policy on this issue to the extent it differs from Universidad Privada del Valle's (UNIVALLE) own.

Editor Code of Conduct

Universidad Privada del Valle (UNIVALLE) group's journal program provides a home for validated, trusted research from the world's brightest and best minds. The editor of a journal plays a vital role in advancing knowledge within fields of research. They do this by:

- Maintaining and improving the quality of work the journal publishes and the integrity of its peer review process,
- Supporting the journal's authors and reviewers,
- Maintaining and improving the journal's reputation in collaboration with the journal's wider editorial team and Universidad Privada del Valle (UNIVALLE).

To support this role, our Editor Code of Conduct sets out the minimum standards for all editors who have responsibility for decisions on journal content to help ensure our journals publish quality, trustworthy content.

Harassment

Universidad Privada del Valle (UNIVALLE) will not tolerate any kind of harassment of our authors, editors, reviewers, staff, or vendors. We expect to work in an environment of mutual respect and will work with the Universidad Privada del Valle (UNIVALLE) ethics team and legal team to deal with any cases of harassment. Advice for researchers experiencing harassment: As a researcher, you should expect your work to be scrutinized by the public, policy makers, and campaigners. However, some researchers working on high-profile subjects that attract controversy have also found themselves targeted with online harassment. To help researchers dealing with these issues, Universidad Privada del Valle (UNIVALLE) has supported the Science Media Centre in producing an updated guide, including tips on how to deal with social media harassment.

Images and figures

Authors should only use images and figures in your article if they are relevant and valuable to the work reported. Please refrain from adding content of this type which is purely illustrative and does not add value to the scholarly work.

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with any images included. There are also specific considerations for science, technology, and medicine, including detailing any image modifications and our policies on inappropriate image manipulation.

Misconduct

Universidad Privada del Valle (UNIVALLE) takes all forms of misconduct seriously and will take all necessary action, in accordance with COPE guidelines, to protect the integrity of the scholarly record.
Examples of misconduct include (but are not limited to):

·Affiliation misrepresentation
·Breaches in copyright/use of third-party material without appropriate permissions
·Citation manipulation
·Duplicate submission/publication
"Ethics dumping"
·Image or data manipulation/fabrication
·Peer review manipulation
·Plagiarism
·Text-recycling/self-plagiarism
·Undisclosed competing interests
·Unethical research

Peer review

Articles published in Universidad Privada del Valle (UNIVALLE) journals (including its imprints) undergo thorough peer review and the *Journal of Latin American Sciences and Culture* (JLASC) endorses COPE guidelines for reviewers.
Journals may operate different peer review processes. Our guide to understanding peer review outlines several different peer review models, including:

·Single-anonymous peer review (also called 'single-blind peer review')
·Double-anonymous peer review (also called 'double-blind peer review')
·Open peer review

Registered Reports

Every Universidad Privada del Valle (UNIVALLE) journal publishes a statement describing the model of peer review used by the journal within the journal homepage. Generally, comments from a minimum of two independent experts are required to ensure complete assessment of the article.
The details of the comments as well as the overall recommendations by peer reviewers will be considered by the Editor when making a decision, but ultimate responsibility for acceptance or rejection lies with the Editor. In accordance with COPE recommendations on ethical editing for new Editors, Editors will assign any submissions they cannot handle (e.g. if they are the author of an article submitted to their own journal) to a member of the Editorial Board or a guest editor. The majority of journals at Universidad Privada del Valle (UNIVALLE) do not permit you to recommend peer reviewers. If you wish to suggest potential reviewers this information can be included in the covering letter, but it is at the discretion of the Editors to consider these reviewers or not. Providing any false information about potential reviewers may lead to rejection of the article.

Confidentiality of peer review

It is a requirement to maintain confidentiality and integrity of the peer review and editorial decision-making process at all stages, complying with data protection regulations (including GDPR). The invited reviewer should declare any competing interest before submitting their report to the journal. If they wish to involve a colleague as a co-reviewer for an article, they should ask the journal editorial office before sharing the manuscript and include their names, affiliation and any relevant competing interests in the comments for Editors when they return their report. In the process of investigating an ethical query, the submitted manuscript, author, reviewer, and any other person (including whistleblowers) involved will be treated in confidence. During an investigation it may be necessary for the Editor to share information with third parties, such as the ethics committee and/or the authors' institution.

Plagiarism

Trust and integrity are among what readers value the most in scholarly peer-reviewed journal content. That's why the Journal of Latin American Sciences and Culture takes the issue of plagiarism very seriously. The Committee on Publication Ethics (COPE) defines plagiarism as: "When somebody presents the work of others (data, words or theories) as if they were his/her own and without proper acknowledgment." For Universidad Privada del Valle (UNIVALLE), this applies to data, images, words or ideas taken from any materials in electronic or print formats without sufficient attribution. The use of any such material either directly or indirectly should be properly acknowledged in all instances. You should always cite your source.

Preprints, preprint servers, and early reporting of scholarly work

We support the need for authors to share early versions of their work before peer-review publication. There are also a number of options for Universidad Privada del Valle (UNIVALLE) authors to share the final Version of Record of their published article.

Preprints and preprint servers

A preprint, also known as the Author's Original Manuscript (AOM), is your article before you have submitted it to a journal for peer review. Preprint servers are online repositories that enable you to post this early version of your research paper online. If you upload your AOM to a non-commercial preprint server, you can subsequently submit the manuscript to a University Privada del Valle (UNIVALLE) journal. We do not consider posting on a preprint server to be duplicate publication and this will not jeopardize consideration for publication. If you've posted your AOM to a preprint server, we ask that, upon acceptance, you acknowledge that the article has been accepted for publication as follows: "This article has been accepted for publication in [JOURNAL TITLE], published by Universidad Privada del Valle (UNIVALLE)."

After publication, please update your preprint, adding the following text to encourage others to read and cite the final published version of your article (the "Version of Record"): "This is an original manuscript of an article published by Universidad Privada del Valle (UNIVALLE) in [JOURNAL TITLE] on [date of publication], available online: http://xxxBArticle DOI]."

Sharing your published article

If you've published in Universidad Privada del Valle (UNIVALLE) journal, there are many ways you can share different versions of your article with colleagues and peers.

Research ethics and consent

All research published in Universidad Privada del Valle (UNIVALLE) journals must have been conducted according to international and local guidelines ensuring ethically conducted research.

Research involving humans

All research studies on humans (individuals, samples or data) must have been performed in accordance with the principles stated in the Declaration of Helsinki.

Prior to starting the study, ethical approval must have been obtained for all protocols from the local institutional review board (IRB) or other appropriate ethics committee to confirm the study meets national and international guidelines for research on humans. A statement to confirm this must be included within the manuscript, which must provide details of the name of the ethics committee and reference/permit numbers where available.

This includes:

·Prospective studies on humans
·Clinical trials
·Clinical Case reports
·Organ or tissue transplants
·Human embryos and human stem cells
·Consent for research involving children, adolescents, and vulnerable or incapacitated study participants
·Retrospective studies
·Survey studies

·Covert observational research
·Research on indigenous communities
·Communication research
·Social media research

Participant/patient privacy and informed consent

Universidad Privada del Valle (UNIVALLE) endorses the recommendations of the International Committee of Medical Journal Editors (ICMJE), which emphasizes that patients and study participants have a right to privacy that should not be infringed without informed consent. In accordance with the principles outlined in the Nuremberg Code, the Belmont Report, and the American Anthropological Association, informed consent must be voluntarily obtained from the participant who should be fully informed of the study including any of the benefits and risks involved.

Research involving animals, plants, and heritage sites

Studies involving vertebrates or regulated invertebrates (e.g. cephalopods), field studies and other non-experimental research on animals must have been carried out after obtaining approval from the relevant institutional ethics committee or the institutional animal use and care committee. Research procedures must be carried out in accordance with applicable national or international guidelines. In field studies, authors must have also obtained any necessary permits for access to lands. Authors must include a statement within the manuscript to provide details of the name of the ethics committee(s) which approved the study and include the permit or animal license numbers where available.

Biosafety, biosecurity, and emerging biotechnology

Universidad Privada del Valle (UNIVALLE) journals will only consider research which has been carried out in compliance with institutional biosafety and biosecurity policies, which in turn should be informed by national or international recommendations.

Standards of reporting

Research should be communicated in a way that supports verification and reproducibility, and as such we encourage authors to provide comprehensive descriptions of their research rationale, protocol, methodology, and analysis. To aid authors in this, a number of study-design-specific consensus-based reporting guidelines have been developed, and we recommend you use these as guidance prior to submitting your manuscript. A comprehensive list of reporting guidelines for medicine and health research can be accessed via the EQUATOR network website, and for biosciences research via the MIBBI Foundry portal.

Use of third-party material

You must obtain the necessary permission to reuse third-party material in your article. These materials may include – but are not limited to – text, illustration, photographs, tables, data, audio, video, film stills, screenshots, or musical notation. The use of short extracts of text and some other types of material is usually permitted, on a limited basis, for the purposes of criticism and review without securing formal permission. If you wish to include any material in your paper for which you do not hold copyright, and which is not covered by this informal agreement, you will need to obtain written permission from the copyright owner prior to submission.

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JLASC is sponsored by the Andean Road Countries for Science and Technology (ARCST), the Universidad Privada del Valle (Bolivia), and Elektro High Tech Co. Ltd.

Collaborators

Cervantes Institute, Chaoxuan Intelligent Research Institute, Media and Information Literacy (MIL) UNESCO.

Affiliated and supported by:

JLASC is affiliated and supported by the Andean Road Countries for Science and Technology (ARCST), the Universidad Privada del Valle (Bolivia), and Elektro High Tech Co. Ltd. and China Biodiversity Conservation and Green Development Foundation (CBCGDF).

1. **Andean Road Countries for Science and Technology**

Mission

ARCST is an international scientific organization founded in 2018 based on the general principles of "joint consultation, joint effort and joint sharing" and the promotion of shared development and achievement of the UN SDGs.

ARCST members include national academies of sciences, universities, research institutes, and international organizations. ARCST is committed to playing an effective role in catalyzing and implementing innovative international science initiatives to build a community of the whole humankind with a shared future. Science, Technology, Innovation, and Capacity building (STIC) is essential to the progress and welfare of human societies and ARCST is particularly keen to cooperate and partner with those who want to collaborate in these endeavors. Promoting the popularization of Science, the exchange of knowledge, the diffusion of information, mutual learning, and collaboration.

Vision

To become an international science organization of global impact in catalyzing and implementing concrete innovative programs, initiatives and actions in Science, Technology, Innovation, and Capacity Building (STIC) for the promotion of shared development and the advancement of the UN Sustainable Development Goals (SDGs). We welcome you to join ARCST!

2. **Elektro High Tech Co. Ltd.**

Mission

To improve people's lives through meaningful innovation.

Vision

To inspire the world with innovative technologies, products, and design that enrich people's lives and contribute to social prosperity by creating a new future.

3. **Universidad Privada del Valle**

Founded on October 4, 1988 by Dr. Gonzalo Ruiz Martínez; Univalle has been projected as a synonym for academic excellence in Latin America with more than 32 undergraduate degree programs. Currently, about 14,000 national and foreign students carry out their higher studies in the university infrastructure with the greatest technological advance in Bolivia. In these 33 years of academic trajectory, Univalle has trained more than 16,000 professionals at the undergraduate and postgraduate levels in its four locations, which are located in Cochabamba, La Paz, Sucre and Trinidad. And soon in the new headquarters located in Santa Cruz. Our history reflects the fact that ... "We are the Scientific Answer to the Future".

4. **China Biodiversity Conservation and Green Development Foundation (CBCGDF)**

The China Foundation for Biodiversity Conservation and Green Development (CBCGDF), a uniform social credit code: 53100000500009167K, is a country-wide non-profit public foundation and a social legal entity dedicated to conservation n of biodiversity and green development. It is an independent NGO on the environment, biodiversity conservation, sustainability and CCAfa ("Community Conservation Area"). It is a member of IUCN and the UN Global Compact, and an accredited observer of the UN IPBES. It is also a member of the Global Genome Biodiversity Network (GGBN), a partner of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), and an observer of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the International Treaty on Plant Genetic Resources for Food. n and Agriculture (ITPGRFA) of the FAO of the United Nations. It is an official data publisher of the Global Biodiversity Information Facility (GBIF). By far, CBCGDF has funded hundreds of grassroots NGOs and supported tens of thousands of people and organized many environmental and conservation events across the country to raise awareness, encourage people and empower people.

Collaborators:

5. **Cervantes Institute**

The Cervantes Institute was founded in Spain in 1991. The largest organization of its kind, its mission is to promote the teaching and learning of Spanish and to make known the diverse cultures of Spanish speaking countries.

6. **Chaoxuan Intelligent Research Institute**

Chaoxuan is a group enterprise integrating research, operation and service, includes research institute, intelligent technology, vocational education, human resource service, industrial operation, financial capital and other business segments, and is committed to the top-level construction and systematic service of ecological scene. Focusing on the strategic deployment of the State, Chaoxuan adheres to the concept of selecting the better of the best and open interconnection, gathers expert resources and leading enterprises, takes research as the lead, takes Digital Twin and other IOT as the support, takes vocational education and human resources services as the core, collaborates with ecological platform, helps with capital and together with public welfare. Chaoxuan has taken the lead in the construction industry and rural revitalization and achieved remarkable results, promoting the transformation and upgrading of traditional industries and promoting sound economic and social development. Chaoxuan has national high-tech, Zhongguancun High-tech, vocational education, labor dispatch, human resources service licensing, radio and TV program production and more than 200 intellectual property rights such as patents, Copyrights, trademarks and so on.Chaoxuan Research Institute is a leading technology and mode research and development institution set up by Chaoxuan Group. The Institute brings together academicians and experts in various fields, and has an academic committee and some expert committees. Focusing on the industry's pain points and social development needs, the Institute carries out theoretical research, industry research, model design, technology application, standard compilation and

international exchanges, providing strong support for economic and social development.

7. **Media and Information Literacy (MIL) UNESCO**

Our brains depend on information to work optimally. The quality of information we engage with largely determines our perceptions, beliefs and attitudes. It could be information from other persons, the media, libraries, archives, museums, publishers, or other information providers including those on the Internet. People across the world are witnessing a dramatic increase in access to information and communication. While some people are starved for information, others are flooded with print, broadcast and digital content. Media and Information Literacy (MIL) provides answers to the questions that we all ask ourselves at some point. How can we access, search, critically assess, use and contribute content wisely, both online and offline? What are our rights online and offline? What are the ethical issues surrounding the access and use of information? How can we engage with media and ICTs to promote equality, intercultural and interreligious dialogue, peace, freedom of expression and access to information? Through capacity-building resources, such as curricula development, policy guidelines and articulation, and assessment framework, UNESCO supports the development of MIL competencies among people. Free and open online courses are available for self-paced learning about MIL. Through media and information technologies, the Organization facilitates networking and research through the Global Alliance for Partnerships on MIL (GAPMIL) and MIL University Network. The recently-launched MIL CLICKS social media initiative is also part of UNESCO's strategy to enable media and information literate societies.

8. **Mega Science**

Science popularization means to bring science to the general public, to disseminate knowledge and to foster a scientific way of thinking among people. In particular, science popularization refers to the understanding of science and public engagement. In this way science popularization is a powerful tool and a strategic measure to build a modern society, not only disseminating useful knowledge and skills but spreading a general approach and a common culture. In general, conflicts between science community and public opinion are connected to people's distrust but also to scientists' prejudice. In some cases, science is not correctly understood by non-scientist due to the use of technical jargon and wrong communication. We believe that every topic can be the object of science popularization; it only depends on the communication skills of who is in charge of the dissemination and the way to disseminate it. That is why we are glad to cooperate with Mega Science, the first platform of science popularization that creates and shares content in three languages and in diverse areas of science. Scan the following QR code to know more about it.

The Journal of Latin American Sciences and Culture promotes the

"Green Science Project"

A practical approach emerged to foster

"Media and Information Literacy (MIL)"
"Science Literacy"
"Science Culture Construction (SCC)"
"South - South Biodiversity Science Project (SSBSP)"

The Journal of Latin American Sciences and Culture is promoting the "Green Science Project". A practical approach emerged to foster MIL and SCIENCE LITERACY

We live in a technology-driven world, characterized by an overarching trend for digitalization that crosses all sectors of society and in the face of the growing impact of media. Knowledge, skills, and attitudes on media and information increasingly become an essential instrument for all citizens. The competencies for interaction and engagement of citizens with media and other information providers, including those on the Internet, are needed for all citizens and this is a lifelong learning process to which different stakeholders can contribute, in formal, informal, and non-formal initiatives.

Media and Information Literacy (MIL) has been growing steadily in all regions of the world, with many international and national organizations and initiatives being held. MIL is an antecedent of science literacy. When MIL is combined with science literacy, they can empower ordinary citizens to contribute to the fight against climate change.

The set of competencies to understand how climate change happens, its impacts, and relevant mitigation approaches are part of science literacy, often referred to as "climate literacy". They are acquired and frequently applied by means of information, media, and digital technology, and are thus intertwined with MIL competencies. Citizens who lack MIL competencies are prone to climate-related disinformation and unverified claims disseminated through various forms of online and offline media. This leads to a low level of acceptance of climate change science, and ignorance of the actions that we can all take individually and collectively. The uninformed rejection of climate change science, nowadays quite common in public discourse, is a major obstacle and can be tackled with MIL.

Media and technology companies play a central role in educating and informing citizens on climate change. Media outlets and information flow on digital communications platforms amplify the urgency of the crisis, communicate key facts about climate, and debunk climate change denial and other conspiracy theories. It is hence crucial for citizens to know how this news and online content are produced, for what purposes, and based on what sources. MIL is also vital for journalists to ensure factual and evidence-based reporting on climate.

The work from UNESCO in this regard is groundbreaking and there are countless efforts to promote and implement MIL internationally while accounting for its contribution to SDGs. Media and information literate citizens and decision-makers are able to access reliable information to make informed decisions as regards consumption and carbon footprint. They are able to adapt or change their attitudes and behaviors accordingly to avoid actions or policies that can exacerbate the crisis, based on accurate information and evidence. They are equipped to proactively counter climate change and contribute to strengthening the public trust in climate change science.

Our practical approach calls for:

- Raising awareness of the importance of checking facts related to environmental sustainability and paying attention to information sources;
- Providing people with the tools and resources needed to learn how to check sources of information, spot disinformation and spread information on the climate emergency in a responsible way;
- Encouraging people to get informed on the latest news, facts and research about the climate emergency and what can be done at different levels.
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We aim to bring together experts from different areas of expertise and knowledge about the different levels of MIL maturity or development that can be found around the globe to sharing of ideas and experiences. Additionally, it is expected to focus on challenges in each context with the objective of informing future policy recommendations on the best strategies to cope with the identified challenges.

Editorial

Dear authors, reviewers, and readers,

In the coming months, the Journal of Latin American Sciences and Culture will continue publishing world views from various scholars to stimulate further thinking and dialogue about the connection between humans, biodiversity, green development, the environment, science and technology, education, and culture.

Eight years remain to meet the Sustainable Development Goals (SDGs), and the future does not seem optimistic. Experts and practitioners believe that most of the policies and solutions implemented so far do not necessarily address the root causes of climate change but look more like a combination of makeshift and not always coherent patches. The future is still unclear. In addition to international negotiations and policy, scientists working on sustainability have evolved into a much broader and more diverse community. Experts focus on environmental pressures, where and why they occur, and how severe the impacts can be, while businesses and advocates propose solutions to achieve a more sustainable society. Their work aims to unravel the complexity of the intersections between humans and nature, and they approach this work from various perspectives. The articles in this special issue are intended to encourage society, young scientists, and practitioners to reflect on the authors' views. We hope they will stimulate further thought and discussion.

Finally, we would like to clarify that the ultimate goal is to stimulate debate and encourage all those interested in constructive dialogue to think about how to contribute more effectively to green science, green development, and climate action from a multidisciplinary perspectiveThe success of the journal is due to the efforts of our international team of editors, board members, anonymous reviewers, authors, readers, and supporting staff. Tremendous efforts have been made to enable authors to make decisions on their manuscripts in a short time. We look forward to continuing our mission with you, our authors, reviewers, and readers, as we continue to serve the journal. Your suggestions, thoughts, and discussions on how we can move forward are always welcome.

On behalf of the JLASC Editorial Board, we invite you to contribute to the journal worldwide. The open-access nature of JLASC will allow more authors to make their research visible and will create opportunities for communication, mutual collaboration, and successful development.

Editorial Board (JLASC)

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Event summary

Declaration of social organizations for Stockholm + 50

Social Organizations of the Pact of Unity and Central Obrera Boliviana of the Plurinational State of Bolivia[1]

[1] Event: National Dialogue of Social Organizations for Stockholm +50.
Coordinator of the event: Diego Pacheco,
General Director of Geopolitics of Vivir Bien and Foreign Policy,
Vice Presidency of the Plurinational State of Bolivia.
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Abstract: The social organizations that make up the Pact of unity Bolivia and the Central Obrera Boliviana (COB) met on May 17, 2022, at the Vice Presidency of the Plurinational State of Bolivia, intending to address the stockholm+50 international meeting.

Keywords: Social Organizations, Pact of Unity, Central Obrera Boliviana (COB), Plurinational State of Bolivia.

The social organizations that make up the Pact of Unity of Bolivia and the Central Workers Organization of Bolivia (COB, acronyms in Spanish) gathered on Tuesday, May 17, at the Vice Presidency of the Plurinational State of Bolivia, with the objective of addressing the Stockholm+50 international meeting, to be held on June 2 and 3, 2022, and thus declare the following:

It is of the utmost urgency and an unpostponable matter to establish a new civilizational horizon in which Living Well in harmony with Mother Earth is upheld.

Humanity commenced from an innate bond and respect for Mother Earth. Thus, human beings and nature were a single organic unit, tied to a single life cycle. This was the case for a long time but with time humans divorced themselves from nature. The forces of colonialism, capitalism, and modernity progressively took human societies on another course, creating a dichotomy with Mother Earth, transforming nature is nothing more than an object or commodity in the hands of a predatory consumer society.

Due to this, Mother Earth is being depleted of its life-carrying capacities. Unlimited economic growth, a characteristic of capitalism is leading us to planetary ecocide, expressed in the multiple crises the world now confronts such as the climate, energy, food, and environmental crises, among others. As such is the case, capitalism can be represented as a blind monster, slowly eating away at itself and everything that surrounds it, leaving behind depopulated country sides and chaos in urban settings. Our vital forests, water, and biodiversity are lost to the jaws of the greed of this blind being.

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Humanity alienated by the capitalist world system has forgotten that its existence depends on the vitality of Mother Earth and not the other way around. Thus, the Anthropocene and capitalism have imposed a system that is promoting suffering and pain and thus a gradual death to all beings on the face of Mother Earth.

The world and the countries that now make up our reality have made much progress in regard to speeches and in environmental legislation, but little to nothing has been done in practice.

We must be self-critical, as hypocrisy has become the standard when speaking of Mother Earth. People have become indolent with Mother Earth and lazy in reinstating our relationship with nature. In many ways, governments, at all levels, have also included the same hypocrisy as they too state how they take care of nature, though this is only on paper and do little in practice. Furthermore, this system which is now present in multilateral fora is perhaps the greatest expression of hypocrisy, one which states that the capitalist world, the origin of the culture of death, is creating a Green Economy disguise, wrapped up in slogans of care for nature, society, and life. As such is the case, if we believe in what is being promoted, we are all guilty of the destruction of Mother Earth. We must thus raise awareness and seek a new trajectory where Mother Earth and an environmental culture recover the values of our ancestors and ancient cultures.

As such is the case, the largest and most polluting transnational companies and corporations must have greater environmental responsibility and must participate in the solutions. Protecting the right to work, they must promote new forms of sustainable production and their financial and technological contribution to the care of Mother Earth must be greater.

We must thus recognize that we are not doing everything we should be doing for Mother Earth. We have to promote livelihoods based on an environmental culture, take care of and access to water, promote organic agricultural production and consumption of local products, move away from chemicals and pollutants, recycle and move towards a circular economy, the rational use of energy, proper water treatment facilities, moving away from plastics, and promoting sustainable transport. For this, we have to create new policies in the short, medium, and long term for the care of Mother Earth, from the local, national and international levels.

It is necessary to rethink the concept of sustainable development because in practice this model of development does not exist for the majority of the world's population, merely for a privileged few. Sustainable development has become a slogan to consolidate capitalism in the world. The life of the planet cannot depend on decisions that respond to capitalist interests and transnational corporations. Other answers and solutions are required from the international community.

The answers that humanity and Mother Earth need to change the current course that is taking us towards planetary ecocide must now come from indigenous nations and peoples, from the working class, and from the peoples, because they endure the consequences and still stand as the true stewards' Mother Earth and the culture of life.

As social organizations, we state that it is imperative to establish a new beginning with the help of the international meeting Stockholm +50, a new "civilizational horizon of Living Well" in harmony with Mother Earth must be engaged, in order to change the anthropocentric and capitalist system, a twisted system which harms to such an extent that only a radically opposed way of life is required, one that must be based on a cosmobiocentric value scheme that allows us to promote a reunification between human beings and nature.

To avoid the collapse of humanity and Mother Earth, it is urgent to implement a new model of life centered on Mother Earth in the world. We have to revive the thought of Living Well in the world, which is based on the worldview of ancient cultures and peoples that have now become marginalized by colonial and liberal forces for centuries. Only through their civilization approach can we save the world. The time to live well is now and it has to come to never go away again. We have been exploited and humiliated for centuries, but we have resisted and now we return as millions.

In the Living Well paradigm, we not only think about the well-being of human beings, but also about achieving complementarity, balance, and harmony among all living beings on Mother Earth, where everything has life, and the imperative to resolve economic, social injustices, environmental and the global imbalance caused by the Anthropocene and the capitalist world system.

This reunification with nature must take place from the recognition of Mother Earth as a subject of rights and as a source or origin and creator of life. In this framework, the rights of human beings must be reassigned to organize their new relationships with nature and among themselves. Mother Earth cannot be commodified and enslaved for the benefit of the rich and powerful. Mother Earth should not have owners and fewer executioners, rather, we should have a continuous relationship of gratitude and respect towards her.

The civilizational horizon of Living Well in harmony with Mother Earth is the only structural solution we have to face the climate crisis, the loss of biodiversity, and pollution in the world. It is not a new solution, it is an alternative provided by an ancient culture that still persists through the peoples that for centuries have been marginalized, exploited, and ignored.

Contributions from Bolivia towards a healthier planet, with prosperity and happiness for all.

The working class, the indigenous nations and peoples, the peasants, intercultural communities, and the majority of the Bolivian people, have taken political power at the head of our social organizations to build a Democratic Cultural Revolution and a process of change that radically modifies the colonial, political, economic and social structures that brought inequality and injustice to the Bolivian people for many centuries.

In Bolivia, social organizations have a fundamental role in the construction of the Living Well in harmony with the Mother Earth paradigm, one that moves towards decolonization and depatriarchalization, so that no one is superior to anyone so that no one feels the owner of anyone, and so that everyone and all become complementary.

Our greatest advances have to do with:

- The construction of a Plurinational State recognizes indigenous nations and peoples that have their own cosmovision and ancestral practices. The constitutionalization of their rights with a decolonizing and depatriarchalizing approach.

- The recognition and exercise of political, economic, and legal pluralism as a basis for Living Well. It is important to promote and spread the experience of community justice, plural economy, social control, and co-responsible participation between the State and society.

- The recognition and application of the rights of indigenous nations and peoples, peasant and intercultural communities.

- The recognition of the rights of Mother Earth as a collective subject of law, and the opening of a global dialogue on water, as a subject of law.

- The revaluation of traditional medicine, its healing practices, and natural medicines becoming a real alternative to deal with the Covid-19 pandemic.

- The construction of a productive communitarian social economic model, with the nationalization, generation, and control of the surpluses of the strategic sectors of the economy, makes it possible to

redistribute income and reduce poverty and extreme poverty. To cite some subsidies, the implementation of vouchers for vulnerable sectors has improved living conditions; and the "Bolivianization" of the currency has stabilized the national economy.

- The strengthening of agricultural food systems and the recognition of ancestral practices of cultivation and harvesting, promote food sovereignty in the country.

We have built a more equitable, fairer country, with greater access for the population to the strategic resources that are the heritage of the Bolivian people and to their benefit.

In Bolivia, we have recognized the rights of Mother Earth, although we still face challenges in their implementation and we need to move towards the creation of the Mother Earth Ombudsman. Greater awareness of the general population is required to understand that Mother Earth is our mother, she is the source and origin of life, and that we are all her daughters and sons. To do this, it is necessary to promote agroecology, recovering ancestral seeds and practices.

At the international level, we have worked on People's Diplomacy, understanding that it is the people, from their social organizations, who have to work out their own solutions to the problems that afflict them, accompanied by the decisions of the governments that must rule by obeying the people's.

Measures and means of implementation to deepen the environmental dimension of Living Well.

As long as the capitalist world system persists, the climate crisis, the loss of biodiversity, and pollution will persist and it will not be possible to Live Well in harmony with Mother Earth, much less with happiness among all living beings.

It is necessary to eliminate at the global level the social, economic, and technological gaps between developed countries, developing countries, and within countries. As long as this gap persists, and continues to grow, there will be no possibility of guaranteeing a full and happy life for humanity and Mother Earth. You cannot Live Well in the world if the majority of the population lives in misery, insecurity, and poverty.

It is impossible to build a world of Living Well if the economic, financial, political, and technological power is concentrated in a few

developed countries and in a few people and transnational corporations that decide on the future and destiny of the planet.

For this reason, the participation of States in economic development and in the generation of wealth in their countries is important, promoting structural solutions to the problems of poverty and inequalities, and taking firm steps towards the right of countries to Live Well. As long as poverty and inequalities exist nationally and internationally, there will continue to be violence against Mother Earth and against all living beings.

It is thus necessary to consolidate economic processes for the benefit of the people and build fair markets at a global level. This can only be achieved with the development and transfer of clean technology from developed countries to developing countries. In addition, it is not necessary to create technological dependency of the countries of the South towards the countries of the North, but rather to eliminate the existing technological gaps.

The surplus generated in the economic process has to be redistributed to pay off historical debts with the people and to restore Mother Earth. At the global level, it is urgent to implement a mechanism to pay the climate debt and other debts resulting from the conquest and colonization by developed countries of developing countries.

It is impossible to solve the climate crisis if mechanisms for the international transfer of carbon emissions between countries continue to be promoted. In addition, the establishment of net zero goals by 2050 for all countries will initiate new carbon colonialism, due to the very soft goals for developed countries and which gives them a wide margin and flexibility to change their energy matrix, while it sets very hard and impossible goals for developing countries to meet. This will put in place financial and institutional structures that will trap developing countries in networks of greater financial and technological dependence and will not lead to a just transition of developing countries in changing their energy matrixes.

From Bolivia, we promote cooperative and non-market-based approaches to solving the climate crisis, through the provision of financing and technologies from developed countries to developing countries, within the framework of equity and common but differentiated responsibilities. Likewise, the establishment of an International Court of Climate Justice is essential.

It is impossible to solve the loss of biodiversity in the world if the developed countries leave all the financial responsibility to the developing countries, and only try to attack the effects and not the causes of violence against Mother Earth, which are poverty and the profound inequality that still exists in the world.

It is impossible to solve pollution in the world if there is no transfer of technology and access to markets with fair prices to advance onto circular economy alternatives alongside solid and liquid waste management in developing countries.

It is not possible to solve the environmental problems in the world if we delve into all the measures and actions that are proposed by green capitalism, such as solutions based on nature, the commodification of natural capital, bioeconomy, and green financing.

A comprehensive view is required to resolve the multiple crises the world confronts, with the main objective of caring for all life on Mother Earth. That is why, from the social organizations of Bolivia, we support the initiative of the Secretary General of the United Nations, Antonio Guterres, to convene an Earth Assembly, to discuss the solution of economic, social, and environmental problems from a cosmobiocentric approach between humanity and Mother Earth.

Stockholm +50 has to be the first step to change the anthropocentric and capitalist world system for the cosmobiocentric civilizational horizon of Living Well in harmony with Mother Earth to recover the "Ajayu" (soul) of Mother Earth.

Conflicts of Interest: The author declares no conflict of interest.

References

A healthy planet for the prosperity of all - our responsibility, our opportunity. Stockhol+50. May 25, 2020. https://www.stockholm50.global/.

Event summary

斯德哥尔摩+50社会组织宣言

作者：多民族玻利维亚国团结公约社会组织和中奥布雷拉玻利维亚.[1]

[1] 事件:斯德哥尔摩社会组织全国对话+50。
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Abstract: The social organizations that make up the Pact of unity Bolivia and the Central Obrera Boliviana (COB) met on May 17, 2022, at the Vice Presidency of the Plurinational State of Bolivia, intending to address the stockholm+50 international meeting.

Keywords: Social Organizations, Pact of Unity, Central Obrera Boliviana (COB), Plurinational State of Bolivia.

组成玻利维亚统一公约（Pact of Unity of Bolivia）和玻利维亚中央工人组织（ Central Workers Organization of Bolivia，COB，西班牙语首字母缩略词）的社会组织于 5 月 17 日星期二聚集在多民族玻利维亚国副总统府召开会议，旨在针对将于 2022 年 6 月 2 日至 3 日举行的斯德哥尔摩+50 国际会议发布宣言，宣布内容如下：

建立一个新的文明视野，维护与地球母亲和谐相处的美好生活，是当务之急和不可拖延的事情。

人类起源于与生俱来的纽带和对地球母亲的尊重。因此，人类和自然是一个单一的有机单元，与一个单一的生命周期联系在一起。很长一段时间都是如此，但随着时间的推移，人类与自然脱节。殖民主义、资本主义和现代性的力量逐渐将人类社会带入了另一条道路，与地球母亲形成了二分法，改造自然只不过是掠夺性消费社会手中的物品或商品。

因此，地球母亲的生命承载能力正在耗尽。无限的经济增长是资本主义的一个特征，它正在导致我们走向地球生态灭绝，这体现在世界现在面临的多重危机中，例如气候、能源、粮食和环境危机等。在这种情况下，资本主义可以被描绘成一个盲目的怪物，慢慢地吞噬自己和周围的一切，留下人口稀少的乡村和城市环境中的混乱。我们重要的森林、水和生物多样性在这个盲目的贪婪的怪物嘴里消失了。

被资本主义世界体系异化的人类忘记了它的存在取决于地球母亲的活力，而不是相反。因此，人类世和资本主义强加了一个促进痛苦和痛苦的系统，从而导致地球母亲表面上的所有生物逐渐死亡。

现在构成我们现实的世界和国家在演讲和环境立法方面取得了很大进展，但在实践中几乎没有做任何事情。

我们必须自我批评，因为虚伪已成为谈论地球母亲的标准。人们对地球母亲变得懒惰，懒惰地恢复我们与自然的关系。在许多方面，

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各级政府也同样虚伪，因为它们也声明了它们如何保护自然，尽管这只是纸上谈兵，实际上很少付诸实践。此外，这个现在出现在多边论坛上的制度也许是虚伪的最大表现，它声称资本主义世界，死亡文化的起源，正在创造一种绿色经济的伪装，包裹在关爱自然、社会和生活的口号中。因此，如果我们相信正在推广的东西，我们都对地球母亲的毁灭负有责任。因此，我们必须提高认识并寻求新的轨迹，让地球母亲和环境文化恢复我们祖先和古代文化的价值观。

在这种情况下，最大和污染最严重的跨国公司和公司必须承担更大的环境责任，必须参与解决方案。为了保护工作权，他们必须促进新形式的可持续生产，并且它们必须为关爱地球母亲做出更大的财政和技术贡献。

因此，我们必须认识到，我们并没有做我们应该为地球母亲做的一切。我们必须促进基于环境文化的生计，照顾和获得水，促进有机农业生产和当地产品的消费，远离化学品和污染物，循环利用并走向循环经济，合理使用能源，适当的水处理设施，远离塑料，促进可持续交通。为此，我们必须在地方、国家和国际层面制定关爱地球母亲的短期、中期和长期新政策。

有必要重新思考可持续发展的概念，因为在实践中，这种发展模式并不适用于世界上的大多数人，而只适用于少数特权阶层。可持续发展已成为巩固世界资本主义的口号。地球的生命不能依赖于回应资本主义利益和跨国公司的决定。需要国际社会提供其他答案和解决方案。

人类和地球母亲需要改变目前正带我们走向地球生态灭绝的道路的答案现在必须来自土著民族和人民、工人阶级和人民，因为他们承受了后果，仍然是地球母亲和生命文化的真正管理者。

作为社会组织，我们表示，必须借助斯德哥尔摩+50国际会议建立一个新的开始，必须参与与地球母亲和谐相处的新的“美好生活的文明视野”，以改变以人类为中心的观念。和资本主义制度，这是一个扭曲的制度，它的危害如此之大，以至于只需要一种完全相反的生活方式，一种必须基于一种以宇宙生物为中心的价值体系，使我们能够促进人类与自然的统一。

为了避免人类和地球母亲的崩溃，在世界范围内实施一种以地球母亲为中心的新生活模式迫在眉睫。我们必须重振“在世界上过得好”的思想，这种思想基于古代文化和民族的世界观，而这些文化和民族现在已经被殖民和自由主义力量边缘化了几个世纪。只有通过他们的文明方式，我们才能拯救世界。现在是过好日子的时候了，它必须永远不会再消失。几个世纪以来，我们一直被剥削和羞辱，但我们一直抵抗，现在我们以数百万人的身份回归。

在“美好生活”范式中，我们不仅要考虑人类的福祉，还要考虑在万物皆有生命的地球母亲上实现所有生物之间的互补、平衡与和谐，以及解决经济、社会问题的必要性。人类世和资本主义世界体系造成的不公正、环境和全球失衡。

这种与自然的重新统一必须从承认地球母亲作为权利主体以及

作为生命的来源或起源和创造者开始。在这个框架下，人类的权利必须重新分配，以组织他们与自然以及彼此之间的新关系。地球母亲不能为了有钱有势的人的利益而被商品化和奴役。地球母亲不应该有主人，不应该有更少的刽子手，相反，我们应该对她有一种持续的感激和尊重的关系。

与地球母亲和谐共处的文明视野是我们必须面对气候危机、生物多样性丧失和世界污染的唯一结构性解决方案。这不是一个新的解决方案，它是一种古老文化提供的替代方案，它仍然存在于几个世纪以来一直被边缘化、剥削和忽视的民族中。

玻利维亚为建设更健康的地球、为所有人带来繁荣和幸福所做的贡献。

工人阶级、土著民族和人民、农民、跨文化社区和大多数玻利维亚人民，在我们社会组织的领导下取得了政治权力，以建立民主文化革命和彻底改变几个世纪以来给玻利维亚人民带来不平等和不公正的殖民、政治、经济和社会结构。

在玻利维亚，社会组织在建设与地球母亲范式和谐相处的美好生活中发挥着重要作用，这一范式朝着非殖民化和去父权化的方向发展，因此没有人优于任何人，因此没有人觉得自己是任何人的主人，让每个人都变得互补。

我们最大的进步：

a. 多民族国家的建设承认有自己的宇宙观和祖传习俗的土著民族和人民。以非殖民化和去父权制的方式将他们的权利宪法化。
b. 承认和行使政治、经济和法律多元化，作为美好生活的基础。促进和传播社区正义、多元经济、社会控制和国家与社会共同负责参与的经验非常重要。
c. 承认和应用土著民族和人民、农民和跨文化社区的权利。
d. 承认地球母亲的权利是一个共同的法律主体，并开启关于水的全球对话，作为一个法律主体。
e. 对传统医学、其治疗方法和天然药物的重新评估成为应对新冠病毒疫情 大流行的真正替代方案。
f. 建设富有成效的社区社会经济模式，将战略性经济部门的产生和控制的盈余国有化，使重新分配收入和减少贫困和极端贫困成为可能。以一些补贴为例，针对弱势群体的代金券的实施改善了生活条件；货币的“玻利维亚化”稳定了国民经济。
g. 加强农业粮食系统和承认祖传的耕作和收获做法，促进了该国的粮食主权。

我们建立了一个更平等、更公平的国家，让人民更容易获得属于玻利维亚人民遗产的战略资源并造福于他们。

在玻利维亚，我们承认地球母亲的权利，尽管我们在实施这些权利方面仍然面临挑战，我们需要朝着创建地球母亲监察员的方向迈进。需要提高普通民众的意识，以了解地球母亲是我们的母亲，她是生命的源泉和起源，我们都是她的子女。为此，有必要促进农业生态

学，恢复祖传种子和做法。

在国际层面，我们致力于人民外交，理解人民，来自他们的社会组织，必须为困扰他们的问题制定自己的解决方案，同时政府的决定必须服务于人民。

深化“美好生活”环境维度的措施和实施方式

只要资本主义世界体系持续存在，气候危机、生物多样性丧失和污染就会持续存在，就不可能与地球母亲和谐相处，更不用说让所有生物都幸福了。

有必要在全球层面消除发达国家、发展中国家和国家内部之间的社会、经济和技术差距。只要这种差距持续存在并继续扩大，就不可能保证人类和地球母亲过上充实而幸福的生活。如果大多数人生活在苦难、不安全和贫困中，你就无法在这个世界上过得很好。

如果经济、金融、政治和技术力量集中在少数几个发达国家和少数几个决定地球未来和命运的人和跨国公司手中，就不可能建立一个宜居世界。

出于这个原因，各国参与经济发展和本国财富的创造非常重要，促进贫困和不平等问题的结构性解决方案，并朝着各国享有美好生活的权利迈出了坚实的一步。只要在国内和国际上存在贫困和不平等，就会继续存在针对地球母亲和所有生物的暴力行为。

因此，有必要为了人民的利益巩固经济进程，并在全球范围内建立公平的市场。这只能通过发达国家向发展中国家开发和转让清洁技术来实现。此外，没有必要造成南方国家对北方国家的技术依赖，而是消除现有的技术差距。

必须重新分配经济过程中产生的盈余，以偿还与人民的历史债务并恢复地球母亲。在全球层面，迫切需要建立机制来偿还发达国家对发展中国家的征服和殖民造成的气候债务和其他债务。

如果继续推动国家间碳排放的国际转移机制，就不可能解决气候危机。此外，为所有国家制定到 2050 年的净零目标将引发新的碳殖民主义，因为发达国家的目标非常软，这给了它们很大的余地和灵活性来改变他们的能源矩阵，而它设定了非常困难和发展中国家不可能实现的目标。这将建立金融和体制结构，使发展中国家陷入对金融和技术依赖程度更高的网络中，不会导致发展中国家在改变其能源矩阵方面进行公正的过渡。

在玻利维亚，我们通过在公平和共同但有区别的责任框架内，通过从发达国家向发展中国家提供资金和技术，促进以合作和非市场为基础的方法来解决气候危机。同样，建立国际气候法庭也至关重要。

如果发达国家把所有的经济责任都交给发展中国家，只针对对地球母亲的暴力行为的后果而不是原因，即贫困和严重的不平等，是不可能解决世界生物多样性丧失的问题的。问题仍然存在于世界上。

如果没有技术转让和以公平价格进入市场以推进循环经济替代方案以及发展中国家的固体和液体废物管理，就不可能解决世界上的污

染问题。

如果我们深入研究绿色资本主义提出的所有措施和行动，例如基于自然的解决方案、自然资本的商品化、生物经济和绿色金融，就不可能解决世界环境问题。

解决世界面临的多重危机需要一个全面的观点，主要目标是关爱地球母亲上的所有生命。这就是为什么我们来自玻利维亚的社会组织，支持联合国秘书长安东尼奥·古特雷斯（**Antonio Guterres**）召开地球大会的倡议，以讨论从以宇宙生物为中心的方法解决人类和地球母亲之间的经济、社会和环境问题。

斯德哥尔摩+50会议必须是改变人类中心主义和资本主义世界体系的第一步，以实现与地球母亲和谐相处的以宇宙生物为中心的文明视野，以恢复地球母亲的**"Ajayu"**（灵魂）。

Conflicts of Interest: The author declares no conflict of interest.

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A healthy planet for the prosperity of all - our responsibility, our opportunity. Stockhol+50. May 25, 2020. https://www.stockholm50.global/.

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Resumen de evento

Declaración de las organizaciones sociales para Estocolmo + 50

Organizaciones Sociales del Pacto de Unidad y Central Obrera Boliviana del Estado Plurinacional de Bolivia[1]

[1] Evento: Diálogo Nacional de Organizaciones Sociales para Estocolmo +50.
Coordinador del evento: Diego Pacheco,
Director General de Geopolítica de Vivir Bien y Política Exterior, Vicepresidencia del Estado Plurinacional de Bolivia. * Correspondence: jallpa@yahoo.com

Resumen: Las organizaciones sociales que integran el Pacto de Unidad de Bolivia y la Central Obrera Bolviana (COB) se reunieron el 17 de mayo de 2022 en la Vicepresidencia del Estado Plurinacional de Bolivia, con el objetivo de abordar el encuentro internacional Estocolmo+50.

Palabras clave: Organizaciones Sociales, Pacto de Unidad, Central Obrera Boliviana, Estado Plurinacional de Bolivia.

Las organizaciones sociales del Pacto de Unidad de Bolivia y la Central Obrera Boliviana, reunidas el día martes 17 de mayo en la Vicepresidencia del Estado Plurinacional de Bolivia, con motivo de la realización de la reunión internacional Estocolmo+50, a llevarse a cabo los días 2 y 3 de junio de 2022, declaramos.

Es una urgencia impostergable establecer en el mundo el horizonte civilizatorio del Vivir Bien en armonía con la Madre Tierra.

La humanidad nació con una ligazón y un respeto muy fuerte a la Madre Tierra. Los seres humanos y la naturaleza eran una sola unidad orgánica, una sola energía y un solo ciclo vital. Así fue durante mucho tiempo, pero luego los seres humanos se divorciaron de la naturaleza. Las fuerzas del colonialismo, el capitalismo y la modernidad han hecho que progresivamente las personas pierdan casi todo contacto con la Madre Tierra, que no es más que un objeto o mercancía de su consumismo depredador.

Nuestra Madre Tierra está muriendo día a día. El crecimiento económico sin límites del capitalismo nos está llevando a un ecocidio planetario, cuyas expresiones son las múltiples crisis en el mundo, como son la crisis climática, energética, alimentaria, ambiental, entre otras. El capitalismo, es un monstruo que está comiendo poco a poco la naturaleza y sus ecosistemas. Estamos viviendo un despoblamiento del campo y desorden en los centros urbanos. Se están perdiendo nuestros bosques, agua y biodiversidad que son vitales.

Citar como: Pacheco, D. (2022). Declaración de organizaciones sociales para Estocolmo + 50. *Journal of Latin American Sciences and Culture*, 4(5), 20-38. https://doi.org/10.52428/27888991.v4i5.274

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La humanidad alienada por el sistema mundial capitalista ha olvidado de que su existencia depende de la vida de la Madre Tierra y no al revés, ya que la Madre Tierra no necesita de los seres humanos. El Antropoceno y el capitalismo han impuesto un sistema que está dando una muerte paulatina y con mucho sufrimiento y dolor a la Madre Tierra.

En el mundo y en los países se ha avanzado mucho en los discursos y en la legislación ambiental en los distintos sectores, pero casi nada o muy poco se cumple en la práctica.

Tenemos que ser autocríticos, todos somos hipócritas con la Madre Tierra. Las personas nos hemos vuelto indolentes con la Madre Tierra y somos flojos con la naturaleza. Muchos gobiernos en todos los niveles también son hipócritas porque dicen que están cuidando la naturaleza, pero sólo en el papel y poco hacen en la práctica. Pero hay una hipocresía mundial que es la mayor de todas, cuando el sistema mundial capitalista que es el origen de la cultura de la muerte se está maquillando y disfrazando, a través del capitalismo verde, como si este fuera un sistema del cuidado de la naturaleza y de la vida. Todos somos culpables de la destrucción de la Madre Tierra. Tenemos que despertar la conciencia del cuidado de la Madre Tierra y de una cultura ambiental recuperando los valores de nuestros ancestros y culturas milenarias.

Las empresas y corporaciones transnacionales más grandes y contaminantes tienen que tener mayor responsabilidad ambiental y deben participar en las soluciones. Protegiendo el derecho al trabajo, tienen que promover nuevas formas de producción sustentable y su contribución financiera y tecnológica para el cuidado de la Madre Tierra tiene que ser mayor.

Reconocemos que no estamos haciendo todo lo que deberíamos hacer con la Madre Tierra. Tenemos que vivir en base a una cultura ambiental, realizar el cuidado y acceso al agua, promover la producción agrícola orgánica y consumo de lo nuestro, sin químicos y contaminantes, reciclaje e industrialización de la basura, uso racional de la energía, planta de tratamiento de aguas, cambiar el uso de plásticos, y transporte sustentable. Tenemos que crear nuevas políticas a corto, mediano y largo plazo para el cuidado de la Madre Tierra, desde los ámbitos locales, nacionales y en el ámbito internacional.

Es necesario repensar el concepto de desarrollo sostenible porque es un mito que no existe para la mayoría de la población mundial sino sólo para unos pocos privilegiados. El desarrollo sostenible se ha convertido en la correa transmisora para consolidar el capitalismo en el mundo. La vida del planeta no puede depender de las decisiones que responden a los intereses capitalistas y a las corporaciones transnacionales. Se requieren otras respuestas y soluciones desde la comunidad.

Las respuestas que la humanidad y la Madre Tierra necesitan para cambiar el actual rumbo que nos está llevando hacia el ecocidio planetario tienen que venir ahora de las naciones y pueblos indígenas, de los trabajadores, de la clase obrera y de los pueblos, porque somos los verdaderos defensores y guardianes de la Madre Tierra y de la cultura de la vida.

Las organizaciones sociales decimos que es un imperativo establecer en el mundo, a partir de la reunión internacional de Estocolmo +50, el "horizonte civilizatorio del Vivir Bien" en armonía con la Madre Tierra, para cambiar el sistema antropocéntrico y capitalista, que tanto daño nos han hecho, por otro modo de vida radicalmente opuesto que esté basado en el cosmobiocentrismo y que nos permita impulsar el reencuentro de los seres humanos con la naturaleza.

Para evitar el colapso de la humanidad y de la Madre Tierra es urgente implementar en el mundo un nuevo modelo de vida centrado en la Madre Tierra. Tenemos que hacer renacer en el mundo el pensamiento del Vivir Bien, que se basa en la cosmovisión de los pueblos ancestrales y milenarios que ha sido marginada por las fuerzas coloniales y liberales durante muchos siglos. Nuestro pensamiento puede salvar al mundo. El tiempo del Vivir bien es ahora y tiene que llegar para no irse nunca más. Nos han explotado y humillado por más de 500 años, pero hemos resistido y hemos vuelto millones.

En el Vivir Bien no sólo se piensa en el bienestar de los seres humanos sino en lograr la complementariedad, equilibrio y armonía entre todos los seres vivos de la Madre Tierra, donde todo tiene vida, y en el imperativo de resolver las injusticias económicas, sociales, ambientales y el desequilibrio mundial ocasionado por el Antropoceno y el sistema mundial capitalista.

El reencuentro con la naturaleza debe darse a partir del reconocimiento de la Madre Tierra como sujeto de derechos y como fuente de origen y criadora de la vida. En ese marco se deben reasignar los derechos de los seres humanos para organizar sus nuevas relaciones con la naturaleza y entre ellos mismos. La Madre Tierra no puede ser mercantilizada y esclavizada para beneficio de los ricos y poderosos. La Madre Tierra no debe tener dueños y menos verdugos, más bien, debemos tener una relación continua de agradecimiento y respeto hacia ella.

El horizonte civilizatorio del Vivir Bien en armonía con la Madre Tierra, es la única solución estructural que tenemos para enfrentar la crisis climática, la pérdida de biodiversidad y la contaminación en el mundo. No es una solución nueva, es una alternativa de tiempo milenarios que se levanta desde los pueblos que por siglos han sido marginados, explotados e ignorados.

Aportes desde Bolivia hacia un planeta más saludable, con prosperidad y felicidad para todas y todos.

La clase trabajadora, las naciones y pueblos indígenas, los campesinos, comunidades interculturales y la mayoría del pueblo boliviano, hemos tomado el poder político a la cabeza de nuestras organizaciones sociales para construir una Revolución Democrática Cultural y un proceso de cambio que modifique radicalmente las estructuras coloniales y capitalistas económicas, políticas y sociales que trajeron desigualdad e injusticia para el pueblo boliviano durante muchos siglos.

En Bolivia las organizaciones sociales tenemos un papel fundamental en la construcción del Vivir Bien en armonía con la Madre Tierra, hacia la descolonización y despatriarcalización, para que nadie sea superior a nadie, para que nadie se sienta dueño de nadie, y para que todas y todos seamos complementarios.

Nuestros mayores avances tienen que ver con:

- La construcción de un Estado plurinacional que reconoce a las naciones y pueblos indígena originarios con sus propias cosmovisiones y prácticas ancestrales y milenarias. La constitucionalización de derechos con un enfoque descolonizador y despatriarcalizador.

- El reconocimiento y ejercicio del pluralismo político, económico, jurídico como base para el Vivir Bien. Es importante potenciar y difundir la experiencia de la justicia comunitaria, la economía plural, el control social y la participación corresponsable entre Estado y sociedad.

- El reconocimiento y aplicación de los derechos de las naciones y pueblos indígenas, comunidades campesinas e interculturales.

- El reconocimiento de los derechos de la Madre Tierra como sujeto colectivo de derecho, y la apertura a un diálogo mundial sobre el agua, como sujeto de derecho.

- La revalorización de la medicina tradicional, sus prácticas curativas y medicamentos naturales se ha constituido en una alternativa real para hacer frente a la pandemia del Covid-19.

- La construcción de un modelo económico social comunitario productivo, con la nacionalización, generación y control de los excedentes de los sectores estratégicos de la economía, ha permitido redistribuir los ingresos y

reducir la pobreza y extrema pobreza. Por citar algunas medidas, la implementación de bonos a sectores vulnerables ha mejorado sus condiciones de vida; y la "bolivianización" de la moneda ha estabilizado la economía nacional.

- El fortalecimiento de los sistemas alimentarios de la agricultura y el reconocimiento de prácticas ancestrales de cultivo y cosechas, hacia la soberanía alimentaria de nuestro país.

Hemos construido un país más equitativo, más justo, y con mayor acceso de la población a los recursos estratégicos que son patrimonio del pueblo boliviano y a sus beneficios.

En Bolivia hemos reconocido los derechos de la Madre Tierra, aunque todavía enfrentamos desafíos en su implementación y necesitamos avanzar hacia la creación de la Defensoría de la Madre Tierra. Se requiere mayor conciencia de la población en general para entender que la Madre Tierra es nuestra madre, es la fuente y el origen de la vida, y que todas y todos somos sus hijas e hijos. Para ello, se hace necesario potenciar la agroecología, recuperando las semillas y prácticas ancestrales.

A nivel internacional hemos trabajado en la Diplomacia de los Pueblos, entendiendo que son los pueblos, desde sus organizaciones sociales, quienes tienen que trabajar sus propias soluciones a los problemas que les aquejan, acompañados por las decisiones de los gobiernos que deben mandar obedeciendo al pueblo.

Medidas y medios de implementación para profundizar la dimensión ambiental del Vivir Bien.

Mientras persista el sistema mundial capitalista persistirá la crisis climática, la pérdida de biodiversidad y la contaminación y no se podrá Vivir Bien en armonía con la Madre Tierra, menos aún con felicidad entre todos los seres vivos.

Es necesario eliminar a nivel global las brechas sociales, económicas y tecnológicas entre los países desarrollados, los países en desarrollo y dentro de los países. Mientras persista esta brecha, y pero aún siga creciendo, no existirá ninguna posibilidad de garantizar la vida plena y feliz de la humanidad y de la Madre Tierra. No se puede Vivir Bien en el mundo si la mayoría de la población vive en miseria, inseguridad y pobreza.

Es imposible construir un mundo para Vivir Bien si el poder económico, financiero, político y tecnológico se centre en pocos países

desarrollados y en unas cuantas personas y corporaciones transnacionales que deciden sobre el futuro y el destino del planeta.

Es por ello importante la participación de los Estados en el desarrollo económico y en la generación de riqueza en sus países, promoviendo soluciones estructurales a los problemas de la pobreza y las desigualdades, y dando pasos firmes en el derecho de los países a Vivir Bien. Mientras exista pobreza y desigualdades en lo nacional e internacional seguirá existiendo violencia contra la Madre Tierra y contra todos los seres vivos.

Es necesario consolidar procesos de industrialización para beneficio de los pueblos y construir mercados justos a nivel global. Esto sólo se puede lograr con el desarrollo y transferencia de tecnología no contaminante desde los países desarrollados hacia los países en vías de desarrollo. Además, no se tiene que crear dependencia tecnológica de los países del sur hacia los países del norte sino más bien eliminar las brechas tecnológicas existentes.

El excedente generado en el proceso económico tiene que redistribuirse para saldar deudas históricas con los pueblos y para restaurar la Madre Tierra. A nivel mundial, es urgente poner en marcha un mecanismo de pago de la deuda climática y otras deudas producto de la conquista y colonización por parte de los países desarrollados hacia los países en desarrollo.

Es imposible resolver la crisis climática si se siguen promoviendo mecanismos para la transferencia internacional de emisiones de carbono entre los países. Además, el establecimiento de metas netas cero al 2050 para todos los países dará inicio a un nuevo colonialismo de carbono, porque esta medida define metas muy blandas para los países desarrollados y les da un amplio margen y flexibilidad para cambiar su matriz energética, mientras que establece metas muy duras e imposibles de cumplir para los países en desarrollo. Esto pondrá en marcha estructuras financieras e institucionales que atraparán a los países en desarrollo en redes de mayor dependencia financiera y tecnológica y no se dará lugar a una transición justa de los países en desarrollo en el cambio de sus matrices energéticas.

Desde Bolivia promovemos los enfoques de cooperación y no basados en los mercados para dar solución a la crisis climática, a través de la provisión de financiamiento y tecnologías de los países desarrollados a los países en desarrollo, en el marco de la equidad y responsabilidades comunes pero diferenciadas. Asimismo, es esencial el establecimiento de un Tribunal Internacional de Justicia Climática.

Es imposible resolver la pérdida de la biodiversidad en el mundo si los países desarrollados dejan toda la responsabilidad financiera a los países en desarrollo, y solamente tratan de atacar los efectos y no

las causas de las violencias contra la Madre Tierra, que son la pobreza y la profunda desigualdad que todavía existe en el mundo.

Es imposible resolver la contaminación en el mundo si no existe transferencia de tecnología y acceso a mercados con precios justos para avanzar en alternativas de economía circular y gestión de residuos sólidos y líquidos en los países en desarrollo.

No es posible resolver los problemas ambientales en el mundo si profundizamos en todas las medidas y acciones que se proponen desde el capitalismo verde, como son las soluciones basadas en la naturaleza, la valorización del capital natural, la bioeconomía y el financiamiento verde.

Se requiere de una mirada integral para resolver las múltiples crisis del mundo teniendo como principal objetivo el cuidado de la vida de la Madre Tierra. Es por ello que, desde las organizaciones sociales de Bolivia, respaldamos la iniciativa del secretario general de Naciones Unidas, Antonio Guterres, de convocar a una Asamblea de la Tierra, para discutir desde los enfoques cosmobiocéntricos la solución de los problemas económicos, sociales y ambientales de la humanidad y de la Madre Tierra.

Estocolmo +50 tiene que ser el primer paso para cambiar el sistema mundial antropocéntrico y capitalista por el horizonte civilizatorio cosmobiocéntrico del Vivir Bien en armonía con la Madre Tierra para recuperar el "Ajayu" (alma) de nuestra Madre Tierra.

Conflictos de intereses: El autor declara que no hay conflicto de intereses.

Referencias

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Artículo de Análisis

Progresión de línea de investigación apuntada en programas de maestría en Filología Hispánica en China

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Resumen: La Filología Hispánica como carrera universitaria ha experimentado desarrollo rápido en China, lo cual permite a cada vez más jóvenes elegir el español como segunda lengua extranjera y tener a los países hispanohablantes como concentración de su estudio. Los graduados de tales programas de español, cuando pasan al mercado laboral, jugarían un papel crítico en los intercambios entre China y países hispanohablantes. Sus intereses académicos provienen una perspectiva interesante de observación. El presente trabajo toma por ejemplo la Facultad de Estudios Hispánicos y Portugueses de la Universidad de Estudios Extranjeros de Beijing y enlista la progresión de los temas de tesina en sus programas de maestría. Se nota un obvio crecimiento de los intereses en temas políticos y sociales, así como mayor atención prestada a los países latinoamericanos.

Palabras clave: Filología Hispánica, China, programas de maestría, investigación de tesina, BFSU.

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Introducción: Filología Hispánica como carrera universitaria en China

Hasta el año 2020, en toda China hay en total más de cien instituciones de educación superior que ofrecen el estudio de español, o más específicamente la filología española, como carrera universitaria. La carrera de español introduce el conocimiento del idioma español, la gramática, y la cultura e historia de los países de habla hispana. Se forman habilidades para escuchar, hablar, leer, escribir, traducir, para que los graduados puedan adaptarse a los requisitos de nivel de español de varias industrias. Cada vez más jóvenes chinos eligen empezar a aprender español después de la secundaria y cuando lo aprenden, van desde nivel cero al primer año de la universidad. Así que, en aproximadamente tres a cuatro años, los estudiantes salen dominando la lengua y preparados para el mercado laboral.

Los cursos de español se están divididos en dos categorías, los cursos para el primer y segundo año y los cursos para el tercer y cuarto año. Para dirigir el diseño de los cursos de las dos categorías, el Programa de Enseñanza de la Etapa Básica de la Carrera de Español en Universidades

y el Plan de Enseñanza de Etapa Superior en de la Carrera de Español Universidades fueron promulgados e implementados en 1998 y 2000 respectivamente. A base de estas guías, se propone también "El Plan de Reforma del Plan de Estudios de Grado de las Carreras Españolas en las Instituciones de Educación Superior"[1], para formar talentos que no solo están fluidos en el idioma sino cuentan con habilidad transcultural y visión globalizada.

Los graduados de la carrera de español suelen estar en posiciones ventajosas cuando tienen que encontrar empleos en el mercado laboral y se dedican a todas las industrias relacionadas con el intercambio entre China y los países de habla hispana. Con la propuesta de la iniciativa "La Franja y la Ruta" y el lema de las empresas chinas "Going Out", el gobierno y las empresas han mostrado demandas cada vez más diversificadas de profesionales que pueden trabajar en español. Así que el diseño de los programas de español se vuelve más orientada al empleo para servir mejor a las necesidades de la sociedad y al desarrollo del país.2 Las principales opciones de empleo incluyen por ejemplo, el Ministerio de Relaciones Exteriores, empresas estatales de industrias críticas, empresas privadas de comercio o inversión, empresas de tecnología de internet, agencias de media, instituciones educativas, etc.

El tema de la presente investigación está inspirado por este marco de recursos humanos, es decir, los universitarios que optan por aprender español como carrera y se gradúan de tal programa. La pregunta central es que antes de pasar a trabajar en industrias específicas, ¿en qué temas están interesados por explorar? Cuando aprenden español, con qué temas relacionan según sus propios intereses. A pesar de que las opciones de empleos las deciden las demandas del mercado laboral, los intereses de investigación durante los años del estudio los deciden los mismos estudiantes de español. Echar una breve mirada a los temas de sus investigaciones para las tesinas nos permite expandir los conocimientos sobre los enfoques académicos y culturales de estos jóvenes chinos que manejan nivel avanzado del idioma español. Vamos a tomar la Facultad de Estudios Hispánico y Portugueses de la Universidad de Estudios Extranjeros de Beijing como la institución más representativa con carreras de filología española.

La Universidad de Estudios Extranjeros de Beijing

La Universidad de Estudios Extranjeros de Beijing (BFSU, por sus siglas en inglés) es la primera universidad china dedicada a la enseñanza de idiomas extranjeros. Hasta hoy la institución cuenta con una historia de más de ochenta años.3 Ahora en la universidad se imparten un total de 101 idiomas extranjeros. La BFSU es conocida por su excelencia en la formación de profesionales especializados en idiomas y filologías extranjeras. Guiado por su lema "aprender con una mente abierta para servir a una gran causa", la BFSU ha servido como una base educativa relevante para formar profesionales cualificados con competencias lingüísticas, para servir al país como diplomáticos, traductores o intérpretes, empresarios, periodistas, abogados, banqueros, entre otros.

La Facultad de Estudios Hispánicos y Portugueses de la Universidad de Estudios Extranjeros de Beijing tiene una historia de 70 años. El programa de español como carrera universitaria se inició por primera vez en 1952 y el programa de portugués en 1961, siendo ambos los primeros en China. A lo largo de los años, la Facultad de Estudios Hispánicos y Portugueses ha hecho una contribución significativa a los intercambios políticos, económicos y culturales entre China y los países de habla hispana y portuguesa, en particular, los países latinoamericanos.

En 1979, la Facultad fue la primera en China en ser autorizada para ofrecer maestrías en estudios hispánicos y en 1996, se convirtió en la primera en China en ofrecer títulos de doctorado en estudios del idioma español. El programa de licenciatura tiene una duración de 4 años y el programa de maestría, 3 años, que se especializa en lingüística, literatura, traducción o estudios de países hispanos. Los programas de doctorado tienen una duración de 3-4 años y se especializan en literatura latinoamericana o interpretación. La Facultad ha firmado convenios de intercambio con múltiples universidades de países de habla hispana y portuguesa. Cada año, envía un gran número de estudiantes a estas universidades para que tengan experiencias de intercambio durante sus estudios a diferentes niveles.

Hasta el momento, la Facultad ha formado más de 2500 profesionales del idioma español (incluidos más de 2200 licenciados, más de 150 maestrías y 12 doctores), así como más de 500 profesionales del idioma portugués. Trabajan como diplomáticos, traductores e intérpretes, profesores, periodistas y otros después de graduarse. Como la institución más representativa en el campo de los estudios hispánicos, la BFSU ha preparado a graduados que han jugado un papel importante en los intercambios entre China y los países de habla hispana.

Temas de investigaciones en programas de maestría

Con el acceso al sistema de tesina de la Universidad de Estudios Extranjeros de Beijing4, hemos podido navegar los contenidos de todas las tesinas disponibles de la Facultad de Estudios Hispánicos y Portugueses. Como estamos interesados en las investigaciones académicas de los estudiantes de español, hemos seleccionado los programas postgrados, específicamente los programas de maestría, porque representan mejor el nivel académico. Las tesinas de maestría son en mayor grado proyectos maduros de investigación, así que reflejan mejor los intereses personales de los estudiantes, que terminan no solo la licenciatura sino también la maestría en filología hispánica.

Al trabajar en las tesinas, entre los temas elegidos por los estudiantes de maestría de español, la mayoría cae en la disciplina lingüística. Ejemplos de estudios lingüísticos son, Distribución de la preposición a en las construcciones causativas del español: un análisis estadístico basado en corpus (Zhao Chong, 2021), y Efectos del feedback correctivo escrito y el aprendizaje autónomo sobre la revisión

del pretérito imperfecto en español en los estudiantes del chino como L1 (Zhang Yue, 2021), etc. La disciplina lingüística está más relacionada con la carrera de filología hispánica, pero al mismo tiempo, a nivel de maestría, se permite una variedad de investigación. Como el presente artículo quería presentar principalmente temas culturales y sociales, no vamos a incluir los temas estrictamente lingüísticos.

Los temas del resto de las investigaciones se pueden dividir en tres categorías, temas literarios, temas de traducción e interpretación y la última, temas de estudios políticos y sociales. Tablas 1 a 3 presentan respectivamente los temas seleccionados de cada categoría, que se asumen a un total de 70 títulos de tesina. Como prestamos especial atención a los enlaces con los países latinoamericanos, no hemos incluido los temas relacionados con España. Las tesinas disponibles en la base de datos son de años 2008 a 2021, lo que nos permite observar la progresión de los temas de investigación en la etapa más reciente.

Tabla 1. Temas literarios.

No.	Año	Autor(a)	Título	País
1	2012	Chen Xiang	Una aproximación sociocrítica a la novela No pasó nada de Antonio Skármeta	Chile
2	2012	Wang Teng	Análisis de la transtextualidad en la novela colombiana Angosta	Colombia
3	2013	Zhang Ke	Mal de amores: reconstrucción de La historia con perspectiva femenina	México
4	2013	Zhang Yanwen	Análisis de los efectos estéticos de la estructura de La Fiesta del Chivo	Perú
5	2015	Zhou Wei	Novela mexicana contemporánea en busca de Klingsor Jorge Volpi narrador no fidedigno	México
6	2015	Huang Xunyi	Mitología utopía resistencia mujer esperanza	Nicaragua
7	2015	Li Cuirong	Nueva novela histórica Alma Simbolismo Observador Visionario	México
8	2015	Zhang Xiaoqin	El llanto en silencio de un queer en el distópico Salón de belleza de Mario Bellatin	Perú-México
9	2015	Yan Bo	Roberto Bolaño 2666 posmodernidad violencia horror	Chile
10	2015	Lou Yu	Novela policíaca posmoderna Detective literario Lector-detective Narrativa de la Guerra Sucia en Argentina	Argentina
11	2016	Meng Xiayun	Estudio de la eco-literatura hispanoamericana basado en novelas ecocríticas de Homero Aridjis y de Luis Sepúlveda	México Chile
12	2016	Chen Xiao	Infancia Memoria Malinche Olvido Perdón difícil	México
13	2017	Pan Yulu	No pasó nada práctica compensación de traducción autovaloración	Chile
14	2019	Yuan Jianan	Informe de traducción de la novela Los cachorros de Mario Vargas Llosa	Perú
15	2021	Geng Xiaokun	El mundo infantil de Julio Cortázar: un análisis textual de sus cuentos	Argentina

Fuente: Elaboración propia.

Estudios literarios son uno de los principales enfoques de los programas de maestría de filología española. Cabe mencionar que, como la enseñanza más temprana del castellano en China ha sido impulsada por una fuerte influencia española, tanto los principios lingüísticos, así como los intereses literarios se han concentrado durante muchos años en el mundo ibérico. En la actualidad, aunque una gran parte del interés de estudio todavía se dedica a los escritores españoles, los temas literarios que estudian autores latinoamericanos han sido una tendencia creciente de los proyectos de investigación de literatura. En la Facultad, varios tutores han concentrado su interés académico en literatura latinoamericana, por eso para los estudiantes, sería un área en la que pueden conseguir guías que necesitan.

De los autores latinoamericanos, se ve que los autores mexicanos han obtenido la mayor atención, y Chile viene en segundo lugar. De las obras seleccionadas, las premiadas han sido más estudiadas como La Fiesta del Chivo de Mario Vargas Llosa y 2666 de Roberto Bolaño. En la época más reciente, se presta atención a países menos céntricos como por ejemplo el estudio de la autora nicaragüense. En general, lo que llama atención en China en estudios literarios es el boom de América Latina. La fuente de realismo mágico ha dejado mucha influencia en China dentro y fuera de la academia. Se observa que los temas literarios elegidos para las investigaciones se han limitado a ciertos escritores y sus obras representativas, sin ampliarse al estudio de fundamentos históricos, culturales y estéticos de la tradición literaria hispanoamericana, lo cual demuestra las limitaciones y al mismo tiempo espacios de avances en este terreno.

Al mismo tiempo, es esencial conocer que los países latinoamericanos son muy diversos y las investigaciones literarias tienen que prestar más atención a toda la región en vez de limitarse en solo unos países o unos escritores. Sin embargo, las tesis en la tabla 1 son todas las que se concentran en la literatura latinoamericana en la Facultad de español de BFSU, durante la temporada 2009-2021. Por un lado, una mayor parte de las tesis de maestría en literatura estudia las obras españolas o historia literaria española, por otro lado, los conocimientos sobre la literatura latinoamericana por lo general son muy limitados, a pesar de que se vaya creciendo los intereses tanto académicos como públicos. Por último, poner los temas literarios delante de los de traducción y de socio-política es porque para la facultad de estudios hispánicos la literatura es una concentración tradicional después de la lingüística, las dos concentraciones son más teóricas mientras las concentraciones de traducción y socio-política son más prácticas.

Tabla 2. Temas de traducción e interpretación.

No.	Año	Autor(a)	Título	Categoría
1	2008	Pan Min	El Principio de cooperación en la traducción de la *Fortaleza Asediada*	Literatura
2	2009	Ding Ning	Estudio sobre la naturaleza de la traducción de subtítulos cinematográficos	Literatura
3	2012	Liu Yuanyi	Aproximación a la traducción de formas de tratamiento en *Hongloumeng* desde la perspectiva pragmática de la te oría de cortesía	Literatura
4	2012	Jia Jia	El análisis del registro en la traducción de la novela *¡Vivir!*	Literatura
5	2013	He Ying	Análisis del tratamiento de los referentes culturales de *Gushixinbian* desde la perspectiva funcionalista	Literatura
6	2017	Wang Yi	La solución de la variación lingüística en la traducción literaria chino-español: análisis basado en *La casa de té*	Literatura
7	2017	Sun Ce	Análisis de traducción de los elementos religiosos en *Viaje al Oeste* a base de la teoría de traducción cultural	Literatura
8	2018	Yin Lingxiao	Estudio de las estrategias de la traducción al chino de la homonimia y la polisemia en Mafalda	Literatura
9	2018	Guo Nandi	La equivalencia funcional de la traducción del realismo mágico enfocada desde la orientación lógica	Literatura
10	2018	Zan Xiaoxue	La traducción del humor verbal en El ingenioso hidalgo don Quijote de la Mancha	Literatura
11	2018	Chen Yuejiao	Traducción del humor con culturemas en el subtítulo de las obras audiovisuales en español	Literatura
12	2019	Ju Likun	Análisis de la traducción al español del carácter “是” —— tomando como el ejemplo la novela Cambios de Mo Yan	Literatura
13	2020	Wang Baiwen	Estudio sobre la traducción de la poesía de la dinastía Tang en base a la estética de la recepción	Literatura
14	2021	Zhang Shan	Entendimiento y Traducción de los Vocablos Culturales en el libro Beng Sim Po Cam	Literatura
15	2021	You Xiaoxin	Enfoque en la omisión ejercida en la traducción de chino a español desde la perspectiva de la teoría de equivale ncia funcional:Un caso de estudio de Un amor que destruye ciudades de Eileen Chang	Literatura
16	2009	Xia Nian	Metáforas chinas y españolas con motivos del arte culinario y su traducción	Cultura
17	2009	Zhu Xiaojin	Una aproximación a la transmisión de la imagen cultural del chino al español	Cultura
18	2017	Cai Yisu	Estudio de traducción de los nombres de platos chinos al español desde la perspectiva de la teoría funcionalista y de la traducción transcultural	Cultura
19	2017	Wang Changluo	Principios y técnicas de la traducción del español al chino de la publicidad impresa	Cultura

20	2020	Jiang Xuelan	Informe de práctica de simulacro de interpretación simultánea de E-sports, tomando como ejemplo el tercer parti do de la final del campeonato mundial 2018 de LOL	Cultura
21	2021	Liu Yixin	Análisis sobre la interpretación de la guía turística del Jardín del administrador humilde desde la teoría del escopo	Cultura
22	2012	Liu Danhua	Características textuales del informe sobre la labor del gobierno de china y su traducción	Sociedad
23	2012	Shan Qiyue	Una mano invisible y una alternativa para la fidelidad – Estrategias traslativas adaptadas en la comunicación al exterior	Sociedad
24	2020	Li Mengning	Informe de interpretación simultánea del chino al español del discurso de Li Keqiang -- utilización del modelo de procesos de decisión, modelo de mecanismos de anticipación y la teoría de relevancia	Sociedad
25	2020	Wang Yiyin	Informe sobre la interpretación consecutiva de discursos pronunciados por Xi Jinping en el ámbito diplomático (fragmentos): un análisis de la interpretación al español de las citaciones de textos clásicos en chino	Sociedad
26	2020	Wang Xinyue	Enfoque en la versión española de expresiones típicas de China desde la teoría del escopo	Sociedad
27	2021	Yang Jing	La atenuación en la interpretación diplomática chino-español—Análisis de la Conferencia de Prensa ofrecida por el Primer Ministro chino en 2020	Sociedad
28	2021	Wang Jue	La explicitación en la interpretación Chino-Español—— Análisis de la interpretación simultánea del discurso en la conferencia anual del Foro de Boao para Asia	Sociedad
29	2021	Li Xin	Informe sobre la simulación de interpretación simultánea de la intervención del presidente venezolano Maduro an te la ONU. Un análisis basado en el marco UMEER	Sociedad
30	2021	Ma Ruichen	Análisis ecológico del discurso de Andrés Manuel López Obrador desde una perspectiva ecolingüística	Sociedad

Fuente: Elaboración propia.

Traducción e interpretación es actualmente la concentración que la mayoría elige en programas de maestría de español. Como el español es para muchos una segunda lengua extranjera, en los estudios y en futuros empleos es inevitable tener que hacer traducciones e interpretaciones. Poder manejar la conexión y transformación entre chino y español son habilidades básicas en la carrera académica. Pero dentro de los temas de traducción e interpretación hay diferentes categorías. Primero, se distingue los estudios literarios y los estudios de traducción de obras literarias. Se nota que en el segundo caso, los estudiantes suelen elegir por estudiar cómo las obras chinas han sido traducidas al español, por ejemplo Fortaleza Asediada, La casa de té, Viaje al oeste, etc. En los estudios de traducción en temas culturales, se destaca el interés por gastronomía, en particular, cómo traducir los nombres de platos chinos al español. Interés por interpretaciones en temas culturales tiene que ver con lo turístico y se aplica a cuando reciben a visitantes hispanohablantes en China.

La tercera parte de los temas sobre traducción e interpretación presta atención a cómo transmitir las informaciones en los términos específicos en china y cómo hacer entender el lenguaje con características china. Casos de estudio de este tipo se concentran en el contexto político, como por ejemplo informe sobre la labor del gobierno, discursos de Xi Jinping etc. También se estudian contextos políticos extranjeros, como la ONU y líderes políticos latinoamericanos como AMLO. El desarrollo de China ha llamado mucha atención en todo el mundo, especialmente su modo económico y político. Las particularidades son importantes de entender, pero difíciles de explicar. Se nota una tendencia creciente en los estudios de traducción para mejor hacer entender estos temas de particularidad sobre China.

Tabla 3. Temas de estudios políticos y sociales.

No.	Año	Autor(a)	Título	País
1	2005	Tan Linglong	Reflexión sobre la crisis política venezolana	Venezuela
2	2009	Yao Hanben	Contiendas electorales entre partidos mexicanos: PRI, PAN y PRD	México
3	2009	Jia Jing	Breve análisis sobre la Alternativa Bolivariana para las Américas (ALBA)	ALBA
4	2011	Sheng Xia	Lo que trae el Plan Colombia al país	Colombia
5	2011	Ding Bowen	Fundamentos teóricos y prácticos para la profundización de reformas socialistas en Cuba	Cuba
6	2011	Zhang Mengmeng	Análisis geopolítico sobre la diplomacia petrolera de Venezuela	Venezuela
7	2011	Xu Kai	CELAC: Sus posibilidades y desafíos futuros	CELAC
8	2012	Xu Sihai	Mujeres en las presidencias latinoamericanas: Análisis de contexto y motivos del empoderamiento político femeni no en América Latina a perspectiva de género	Chile
9	2013	Ma Shenjie	Análisis de la estructura de Chile Solidario desde la perspectiva de los mecanismos de conexión del Programa de Apoyo a Microemprendimiento	Chile
10	2013	Wang Fei	Análisis de la guerra antidroga del ex presidente mexicano Felipe Calderón	México
11	2013	Shang Ruofan	Análisis de la informalidad urbana de México: actualidad y perspectivas -el caso del comercio informal en la vía p ública de la Ciudad de México	México
12	2015	Li Yan	Estudio de obstáculos al financiamiento de las Mipymes en Costa Rica y las medidas en su contra	Costa Rica
13	2015	Chu Lidong	Políticas fiscales para fomentar el desarrollo del sector de petróleo de Venezuela	Venezuela

14	2015	Li Tianying	Análisis del sistema de evaluación docente en la educación básica mexicana durante el sexenio del presidente C alderón	México
15	2016	Zhou Jilu	Microfinanzas en América Latina: Su Responsabilidad Social y Sostenibilidad	LAC
16	2016	Liu Chengzu	La cuestión de Estado-nación en el proceso de la refundación del Estado Plurinacional de Bolivia	Bolivia
17	2017	Liu Wei	Balance del Poder y Reformas Tributarias en Chile -- Análisis Político Aplicando la Teoría de Recursos del Poder	Chile
18	2018	Liu Ying	Una investigación sobre la cuestión agraria antes y después de la Revolución Mexicana de 1910	México
19	2019	Jia Shihui	Desarrollo político en Panamá tras la transición a la democracia. Enfoque en los referéndums	Panamá
20	2019	Wang Silu	La Imagen de China en el periódico mexicano La Jornada (2013-2018)	México
21	2019	Dong Xiaohan	La investigación de la dolarización de las monedas. Análisis de los casos latinoamericanos	LAC
22	2020	Li Jing	Evolución del Populismo en Argentina en el Siglo XX	Argentina
23	2020	Li Yanming	Inquietud y esfuerzos de los mexicanos por la identidad mexicana	México
24	2020	Yang Jing	Reconciliación y construcción de la paz en la era post-conflicto en Colombia. Enfoque en transformación del conflicto	Colombia
25	2021	Tu Yiwei	Gestión de riesgos sociales y medioambientales de las inversiones chinas en las infraestructuras mexicanas	México

Fuente: Elaboración propia.

Los estudios políticos y sociales de los países hispanohablantes es otra concentración en los programas de español, aparte de literatura y traducción. Entre los países latinoamericanos, se ve que otra vez México ha sido el más estudiado. La Facultad tiene una relación bien estrecha con la Universidad Nacional Autónoma de México (UNAM), y esta tiene su centro de estudios chinos basado en la Universidad de Estudios de Extranjero de Beijing. Las relaciones de colaboraciones institucionales han facilitado el intercambio de estudios e investigadores, lo que puede explicar en algún grado el destaque de atención prestado a México.

Los intereses por temas políticos y económicos en la región de América Latina pueden dividirse en dos tipos, por una parte, los tópicos más destacados a nivel regional, como la integración de América Latina y la Alianza Bolivariana para los Pueblos de Nuestra América (ALBA), y por la otra, los países y sus asuntos de controversia, como crisis fiscal de Venezuela y reconciliación en Colombia, etc. Igual que la tendencia observada en temas literarios, más recientemente, se nota un cambio de interés hacia países menos grandes, como el caso de Costa Rica y Panamá. A lo largo de las relaciones crecientes que China viene

desarrollando con la región, los enfoques de intereses de investigación han ido diversificando.

Conclusiones: Progresión de intereses de investigación

Los estudiantes que eligen por aprender español como carrera universitaria terminarían con un nivel avanzado del idioma y con conocimientos variados sobre los países hispanohablantes, lo cual los prepara bien para que se dediquen en su carrera profesional a los intercambios entre China y estos países. Los programas de licenciatura y de maestría en Filología Hispánica caen, en primer lugar, en la disciplina lingüística así que la enseñanza del mismo idioma forma la base de tales programas. Los enfoques lingüísticos y literarios siempre han sido temas tradicionales. Sin embargo, a lo largo del desarrollo de programas de español, han surgido nuevos cambios. Por un lado, el mercado laboral viene planteando más demandas a los graduados de carrera de español, y por el otro, y la tendencia interdisciplinaria de la academia ha animado más espacios de colaboración entre las humanidades y las ciencias sociales. De esta manera, los enfoques de estudios incorporan cada vez más los temas políticos y económicos.

Para el terreno de estudios regionales, o sea, estudios de áreas, la motivación para desarrollar los conocimientos sobre algún país o alguna región, se encuentra en la necesidad de la seguridad nacional en su fondo. Es inevitable que los estudios latinoamericanos sirvan las relaciones entre China y América Latina. Al mismo tiempo, los avances de las relaciones bilaterales con los países hispanohablantes motivan en gran medida el desarrollo de carreras de español en las universidades. Existe un fortalecimiento mutuo entre los cambios de la realidad y la renovación académica.

El presente trabajo tiene como eje de atención los enfoques académicos y culturales de los jóvenes chinos que optan por aprender español durante una carrera universitaria. Debido a las limitaciones de base de recursos, falta para subrayar la relación precisa entre los intereses académicos y las demandas del mercado laboral. Futuras agendas de investigación han de revelar, tanto a nivel individual como en manera categórica, la inclusión de temas socia-políticos en los intereses de los estudiantes y cómo esta integridad dirige sus opciones profesionales.

Los programas de Filología Hispánica reflejan bien esta relación. Y el presente trabajo toman como ejemplo los temas de tesinas en los programas de maestría, de la Facultad de Estudios Hispánicos y Portugueses de la Universidad de Estudios Extranjeros de Beijing, para observar la progresión de intereses de investigación. Se nota un obvio crecimiento en la atención prestada a América Latina, especialmente en los estudios políticos y sociales. Los programas de español se vuelven más que el idioma, sino que asume una formación integral de recursos humanos que pueden jugar un papel céntrico en sostener los interacciones entre China y la región de América Latina. Los intereses de investigación de los estudiantes de maestría siguen estrechamente

los cambios de la realidad y desde la academia hacia la práctica, estos jóvenes intelectuales van a asumir protagonistas en decidir el futuro de las relaciones entre las dos partes, a pesar de su obvia distancia geográfica.

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Opinion paper

Exploration on the integration of innovation and entrepreneurship education into the talent training system of colleges and universities under the background of double-first construction

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Abstract: Science and technology and innovation are the main drivers of social development at this stage. Modern national governance and education system should further improve the strength of innovation and entrepreneurship education. However, at present, some colleges and universities focus on professional subject education, and have insufficient knowledge and attention to innovation and entrepreneurship education. Even if they offer entrepreneurship-related courses, there are still problems such as ambiguous teaching content, weak entrepreneurship teaching atmosphere, and utilitarian teaching objectives. To this end, this paper focuses on the national double-first construction strategic tasks, innovative talent training system research, and colleges and universities' innovative talent training plan.

Keywords: double-first background; entrepreneurship education; talent training.

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1. Introduction

Double-first construction is an important strategic decision for the development of education in China at present. It has repositioned and shaped the direction and basic pattern of higher education and improved the awareness of innovation and entrepreneurship education and innovative talent training in colleges and universities. Innovation is the process of turning a new concept into commercial success or widespread use. Creativity is an active process necessarily involved in innovation. It is a learning habit that requires skill as well as especific understanding of the contexts in which creativity is being applied. Plan professional courses, teaching methods, coordinate domestic resources, and social resources, and take advantage of national cultural exchange opportunities to jointly promote the construction plan. Innovation and entrepreneurship education needs to rely on the implementation of the talent training function of colleges and universities (Cabero, 2019; Guachi, 2019). Therefore, it is necessary to establish corresponding training strategies from a practical perspective, focusing on the current situation of talent training in colleges and universities.

2. The development of innovation and entrepreneurship education in colleges and universities

2.1. Establish an innovation and entrepreneurship education system

It is necessary to take innovation and entrepreneurship as the strategic goal of navigation, and with this as the focus of work, colleges and universities should build an innovation and entrepreneurship education college with the awareness of integrating thinking and overall planning, combining on-campus resources, social resources, scientific research strength, and talent advantages. As the overall lead unit, the School of Innovation and Entrepreneurship coordinates the Student Office, the Academic Affairs Office, and other departments to work together to pool their wisdom and jointly promote the implementation of innovation and entrepreneurship.

Improve various facilities and promote internal and external cooperation. The educational resources of colleges and universities are limited. In order to ensure that the reform of innovation and entrepreneurship education is implemented in colleges and universities, colleges and universities should coordinate the educational resources of all parties inside and outside the university, strengthen the construction of various infrastructures such as software and hardware, so that students can use rich resources to carry out entrepreneurial practice activities. At the same time, in the process of promotion, it is necessary to use the information-based communication platform and the information-based management platform to promote various functional departments to strengthen contact and promote collaborative progress (Zhou, 2021). Educational funds should be invested from different channels to provide financial support for innovation and entrepreneurship education, special services, and construction of venues and hardware facilities to mark sure the education work is implemented faster.

2.2. Building a Hybrid Guidance System

Establish genes and concepts, and innovate talent training models. Colleges and universities should aim to build morality and cultivate people, implement innovation and entrepreneurship education into the whole process of talent training, and integrate innovation and entrepreneurship concepts and methods with professional course teaching. In the theoretical teaching of professional courses, strengthen the practice of innovation and entrepreneurship, form teaching characteristics, synergize social resources, establish a training plan for innovative and entrepreneurial talents, and use multiple practical measures to stimulate the innovative spirit and entrepreneurial ability of college students (Yang & Wang, 2020).

Taking informatization as the form of education, establish an online and offline hybrid teaching mode, for all students, provide employment and entrepreneurship guidance for students in the form of

compulsory courses and elective courses, and combine professional characteristics to establish general education + subject foundation majors. The innovation and entrepreneurship education curriculum system of "education + independent curriculum. Colleges and universities should transform from traditional lecture-based teaching to network-based teaching, relying on online course teaching forms such as MOOCs and Tencent Classrooms to provide support for the creation of innovation and entrepreneurship education courses. Today's college students are a generation that grew up in the development of the Internet, so they are more receptive to the online teaching model, and through online teaching, they can widely mobilize and strengthen the practice of students' innovation and entrepreneurship courses and the progress of teaching tasks monitor.

2.3. Build an innovation and entrepreneurship platform

It is college teachers who should encourage college students to actively participate in innovation and entrepreneurship practice teaching activities, so that students have the courage to break the routine, learn innovation and entrepreneurship theory, pool creativity, and strengthen their practical ability with the help of innovation and entrepreneurship practice platform. Before that, colleges and universities need to practice entrepreneurship for students, build entrepreneurial incubation parks, integrate internal and external resources, and provide one-stop guidance and services for college students to start their own businesses (Xie, Chen, & Li, 2020).

The close combination of theory and practice helps students make innovations and breakthroughs. Colleges and universities need to update and optimize in real-time according to the practical teaching situation of students' innovation and entrepreneurship education and form an innovative experimental training system for college students around the four levels of colleges and universities, branches, provinces, cities, and countries. At the same time, colleges and universities should build an innovation and entrepreneurship practice education system, combine existing resources of teaching schools with social resources, strengthen school-enterprise cooperation, jointly build and share resources, build a school-enterprise cooperative teaching platform, and integrate technology, practical positions, specific projects with professional courses and innovation and entrepreneurship education to deepen talent training under the joint action of schools and enterprises (Wen, 2019).

Advocate innovative practice and create a second classroom. Colleges and universities should actively play the role of the second classroom in innovation, entrepreneurship education, and combine the specific work content of innovation and entrepreneurship education as a compulsory course for students to achieve full coverage of student education, and regularly introduce innovation and entrepreneurship education into the second classroom. Create a resource library of high-quality teaching project cases.

3. Double-first, strategic positioning in construction

3.1. Double-first, the fundamental foothold of the university

To build a double-first, the overall goal of the university is to cultivate talents, scientific research, social services, cultural inheritance, and innovation. Higher education institutions have become an important force for knowledge dissemination and scientific and technological innovation, an important carrier of advanced ideas and excellent cultural inheritance. In order to implement this overall goal, although the four development tasks of talent training, scientific research, social service, and cultural inheritance and innovation have been specified, it needs to be clear that in innovation and entrepreneurship education, the cultivation of innovative talents is the foundation of all development and education. Colleges and universities need to rely heavily on the cultivation of innovative talents so that the four development tasks form a state of mutual coupling. In the process of cultivating innovative talents, colleges and universities need to combine teaching, scientific research, labor, etc. to build a positive and innovative, knowledge-respecting academic environment for students, so that innovative talent training education, and scientific research, social services and cultural heritage are connected. At the same time, it can also provide students with scientific research units or industrial units with direct experience and ability, and integrate the educational resources of colleges and universities, scientific research resources of scientific research units, production resources of enterprises, and cultural resources, which not only meets the task requirements of practical education in colleges and universities but also meets the talent needs of economic and social development, and at the same time, consciously inherit traditional culture in talent training, and carry out innovation and development of traditional culture.

3.2. Collaborative multi-task integration promotion

The deepening of a single task and the coordination of multiple tasks are the basic logic of building a double-first university. The fundamental task of implementing the task of building a first-class institution of higher learning is the cultivation of innovative talents. Specifically, it is analyzed at two levels.

Highlight the core of talent training, clarify the requirements for the ability and quality of innovative talent training, and cultivate students' sense of mission and social responsibility, so that students have the innovative spirit and practical ability required by modern society, and become compound and applied professionals. Schools can encourage and support students to participate in innovative and entrepreneurial practice activities, stimulate students' wisdom and personality, and enable students to improve their comprehensive personal quality in social practice, broaden their international vision, and develop scientific spirit and entrepreneurial awareness.

Colleges and universities should combine the innovative talent training plan with other ideological tasks to form a relationship of mutual connection and simultaneous development. First, teachers should play a guiding role, and colleges and universities should strengthen the construction of teachers' morality and style, build a professional team of teachers with ideals, morality, self-cultivation, and benevolence, or hire a variety of companies to share their workplace experience, especially alumni enterprises, more authenticity and affinity. Strengthen the development of scientific research disciplines and the improvement of professional capabilities, focus on building a number of domestic leading disciplines and research fields that are comparable to international scientific research levels, and create an innovative and entrepreneurial practice environment, so that students can take the initiative to explore in a relaxed academic atmosphere.

4. The integration of innovation and entrepreneurship education and talent training

4.1. From the perspective of entrepreneurial practice, focus on the cultivation of workability

Workability is an important part of talent training in the new era, and it is also the foundation for students to stand in society and achieve self-development after graduation. However, at this stage, the basic workability of students is not connected with the majors they study in universities, which means that the majors that many studies are not related to the jobs they engage in after graduation. Therefore, when establishing a training plan around workability, two aspects should be considered. The first is the job counterpart, which has relatively high requirements and measurement standards for students' workability and is also relatively professional. It is necessary to master the professional knowledge and professional skills required in the corresponding position. For construction engineering surveying positions, it is necessary to clarify the measurement technology, lay-out operation, etc., as well as to pay attention to new technologies and new theories in the industry, and to comprehensively consider the different characteristics of different building structures and quality requirements.

For design positions, you must know how to draw, use electronic drawing tools, and master some mechanics knowledge. These jobs are very professional, but being able to do these jobs requires the support of basic abilities. If you lack systematic knowledge and basic abilities, you will be unable to do the job just by virtue of your interest. For non-corresponding work, such as clerical, administrative, personnel, and other types of work, there is no high technical content. Although these jobs do not have technical requirements, they also require basic work skills. For example, master office software, copywriting, interpersonal communication, and other skills. Therefore, to cultivate innovative talents, the cultivation of their working ability is very important, so that students can comprehensively analyze and solve practical problems based on the knowledge they have learned and accumulated

practical experience. When encountering complex problems, it can also flexibly reorganize knowledge according to the existing knowledge system and find new solutions. Therefore, colleges and universities should build a practical education platform for innovation and entrepreneurship, strengthen the integration of production and education, establish a school-enterprise coordination compound professional talent training mechanism, and focus on the basic working abilities that innovative talents need to master to stimulate their potential.

4.2. From the perspective of thinking, focus on thinking training

Most people do not think that this is an important ability in the understanding of ideological values. In real work, it is difficult to distinguish between strengths and weaknesses due to differences in individual concepts. For example: in the same class, some students study well in school, but after graduation, their work is not satisfactory and their life is relatively mediocre, while some students have mediocre grades in school, but their careers are flourishing. The fundamental reason for these differences lies in the ability of individuals, as well as the influence of family factors and growth background. At the same time, the key factor that plays a major role is the difference in individual ideological values. For example, many students in colleges and universities are in a state of confusion when facing career planning and life choices. They do not know what they will do in the future. How to make career planning to maximize their own interests and values? Students do not have a clear understanding of these.

They often face life and deal with work problems with a "let by" mentality, without considering their long-term career development and life. However, if students have scientific, objective, and correct ideological values, and can take their career and life seriously with scientific cognition, it will be easier to see the essence of the problem when facing setbacks in life, and to strengthen the direction of their choice. Therefore, colleges and universities should strengthen the cultivation of students' thinking ability, so that students can establish scientific and objective values and outlook on life. For example, in response to this problem, Zhejiang University has proposed strengthening the characteristics of the integration of science and education, emphasizing that scientific research educates people, encouraging students to actively participate in scientific research, and training logical thinking in the process of discovering new phenomena, revealing new mechanisms, and establishing new theories. At the same time, it advocates breaking disciplinary barriers, forming a project orientation, promoting the construction of a multi-disciplinary talent training center of excellence, cultivating innovative talents in the interdisciplinary and knowledge integration, and improving students' thinking ability and innovation ability.

4.3. Promote the international development of education

The current era is an organically connected whole, which endows the cultivation of innovative talents with national characteristics. Under the dual strategy of going out and inviting in, colleges and universities should focus on the national education strategy to improve the ability of innovative talents to participate in international affairs. For example: Encourage and guide students to actively participate in international academic exchanges, strengthen cultural communication and interpersonal communication skills in cross-cultural exchanges, be able to stand at the forefront of the development of the times, pay attention to and gain insight into the trend of scientific development, broaden the international vision, and understand the common interests of all mankind important development issues of concern. After the double-first construction is implemented, colleges and universities should increase the number of library books, provide students with a variety of academic resources, improve various hardware and software infrastructure, and provide students with opportunities for diverse practice, so that students can use these resources to develop comprehensive capabilities.

Efforts are made to add exchange programs with world-class universities and strive to provide each student with an opportunity for overseas exchange and learning, as well as the active expansion of high-level international talent training programs proposed by Tsinghua University, all focus on cultivating innovative talents who are competent in international affairs.

5. Conclusion

Based on the above analysis, innovation and entrepreneurship education are directly related to the cultivation of innovative talents. In double-first university construction, the quality of talent cultivation also determines the competitiveness and advantages of talents in social development. Colleges and universities should stand in the center of economic and social development. The required compound and applied talent training and international development perspective, combined with national education policies, organize students to participate in innovation and entrepreneurship social practice activities, academic exchanges, etc., provide students with rich educational resources and innovation and entrepreneurship practice opportunities so that students can use resources and practical activities to improve their comprehensive ability and align themselves with the talent standards required by society.

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Opinion paper

How universities can build an open platform for innovation and entrepreneurship for college students? Ignite the enthusiasm for creation, cultivate the team, and support key projects

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Abstract: Directly under the Ministry of Education, Xidian University (XDU) is a national key university featuring electronic and information science. XDU integrates innovation and entrepreneurship education into the whole process of college students' training combining the characteristics of electronic and information science. Through the three aspects of "Ignite the enthusiasm for creation, cultivate the team, and support key projects". XDU has cultivated the innovative spirit of college students and improved their entrepreneurial ability and has achieved outstanding results. This study aims to explore the scientific and efficient working system in the innovation and entrepreneurship education (IEE) of XDU. The case in this study is the project research findings of the Ministry of Education's 2021 ideological and political work in colleges and universities for the construction of young and middle-aged core teams.

Keywords: Xidian University; Innovation and Entrepreneurship Education; Higher education.

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1. Introduction

Based in western China, XDU is a national key university featuring electronic and information science. XDU cultivates colleges students around the goal of "patriotic enterprising, innovative thinking, a leader with an international perspective". Through the three aspects of " Ignite the enthusiasm for creation, cultivate the team, and support key projects", XDU has cultivated the innovative spirit of college students. By optimizing the educational environment for innovation and entrepreneurship, XDU cultivates the innovative spirit of college students, helps them establish entrepreneurial awareness and improves their entrepreneurial ability (Ministry of education of the people's republic of China, 2021).

2. Ignite the Enthusiasm for Creation: Create a Platform for Science and Technology Competitions that College Students Participate in Widely, and Establish a Curriculum System that Covers all Students

Since 1988, XDU has held the "Spark Cup" extracurricular academic and scientific and technological works competition for college students for 34 consecutive years, with more than 10,000 college students

participating and submitting more than 3,000 works every year. XDU forms a good atmosphere for college students to take the initiative to practice and participate in innovation (Zhu, 2018). A large number of willing and talented students emerged. XDU unifies this competition with the innovation and entrepreneurship training program for college students, the national "Challenge Cup", and the national electronic design competition to form a hierarchical, progressive, and widely-participated technology competition platform. XDU also designed the "second transcript" system for college students, aiming to develop their abilities.

XDU has opened nearly 100 courses related to innovation and entrepreneurship. It has hired more than 110 outstanding entrepreneurs as innovation and entrepreneurship mentors. About 66 joint laboratories have been founded with multinational education corporations, including Microsoft, IBM, Intel, SAP, etc. XDU has compiled 27 series of textbooks including "Entrepreneurship Management", and "Xidian Alumni Entrepreneurship Cases", which are represented by the well-known alumni Chuanzhi Liu. XDU integrates innovation and entrepreneurship education into the whole process of talent training, covering all college students (Zhao & Zhang, 2021).

3. Cultivate the Team: Organize Innovation and Entrepreneurship Training Camps for College Students, and Set up School-enterprise Cooperation Clubs

XDU actively explores a new mechanism for industry-university-research collaborative innovation and education. In accordance with the principle of combining "in-class and out-of-class, in-school and out-of-school, innovation and entrepreneurship", XDU organized a college student innovation and entrepreneurship training camp. One hundred students are selected for each training camp, and 8-credit courses are offered under the basic requirement of "cultivating science, emphasizing engineering, studying humanities, and integrating art". Under the guidance of innovation and entrepreneurship mentors, the training camp carried out innovation and entrepreneurship practice in the form of projects, which effectively promoted the improvement of college students' innovation and entrepreneurship ability (Wang & Zhang, 2020).

XDU, together with well-known enterprises and research institutes in the industry including Microsoft, Tencent, Huawei, and CETC Group Corporation, has established 56 campus enterprise innovation and entrepreneurship clubs. XDU has established nearly 200 innovative and entrepreneurial teams, attracting more than 2,000 students to join. Under the guidance of innovation and entrepreneurship mentors, team members carry out the entrepreneurial practice by participating in enterprise product development, project management, etc. This not only helps companies improve their products but also effectively enhances the engineering practice capabilities of college students' innovation and entrepreneurship teams.

4. Support Key Projects: Set up the "Principal Fund" and "Creative Space" for Innovation and Entrepreneurship to Support College Students' Entrepreneurial Projects with Market Prospects

Since 2014, XDU has focused on strengthening the support of college students' innovation and entrepreneurship and set up an "Innovation and Entrepreneurship President Fund" of 10 million yuan to especially fund entrepreneurial projects with a certain maturity and feasibility. This method helps the team go through the initial stage smoothly and supports its healthy and rapid growth.

At the same time, 37 national or ministerial-level laboratories and R&D centers have been opened to all college students. XDU has formulated and implemented a flexible study system for students who start their businesses. XDU integrates resources within the school by focusing on building a 3,000-square-meter " Creative space" with electronic information features. This space has become a gathering place for college students to help them generate ideas, manufacture products, and attract investment (Liu, Zhao & Zhu, 2020).

In the past three years, XDU has won 445 international awards, 543 national awards, and 4,280 provincial innovation and entrepreneurship competition awards in various innovation and entrepreneurship competitions. The school has more than 100 student entrepreneurial teams, and student entrepreneurial companies have received a total of 300 million yuan in corporate and venture capital. It is worth mentioning that college students not only actively participate in the process of scientific and technological innovation, but also pay attention to the integration of technology and culture. The research and development of "Huaxia Photo-Robot Shadow Play" which participated in the "China Entrepreneurship Model" program was reported by CCTV "News Network".

5. Prospect

In the future, XDU will continue to integrate the innovation and entrepreneurship education of college students during the whole process of talent training, encourage college students to innovate and start businesses to make sure more college students become doers and entrepreneurs who take social responsibilities and actively participate in the trend of the times (Cabero, 2019; Guachi, 2019).

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Entrevista

Entrevista a Beimar López Subia: Un jóven matemático Boliviano

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1.- ¿Qué te inspiró a desarrollar esta investigación?
Yo, Beimar Wilfredo López Subia, siempre he avalado que en la matemática, todo es posible, y si no existe matemática puede crearse. Me he dedicado a investigar la matemática desde siempre, he dictado cursos para enseñar que la matemática no es difícil; hasta que un día, un estudiante me preguntó si existía una fórmula para encontrar la sucesión de números primos; y en ese momento no tenía la respuesta. Sin embargo, al investigar a profundidad me he dado cuenta que la matemática estaba incompleta; faltaba una fórmula que encuentre números primos de manera sencilla. En ese momento inició la investigación, he dejado de lado el estudio por 3 años, y me he dedicado únicamente a encontrar la fórmula. He estudiado por mi cuenta mucho más de lo que había pensado; y llegué a considerar que estaba listo para iniciar con esta grandiosa investigación, que en el fondo parecía imposible.

2.- ¿De qué se trata la fórmula?
Esta fórmula es capaz de encontrar la cantidad de números primos menores a un número dado de manera exacta, sin usar factoriales y usando matemática sencilla; la fórmula creada puede verificar si un número es primo o compuesto, siendo capaz de encontrar la sucesión de números primos sin saltarse ningún número primo. Con esta fórmula se puede factorizar un número grande de manera sencilla, cosa que antes podría ser imposible, pero ahora es posible encontrar un factor de manera más rápida. Este avance ayuda a la matemática, en la distribución de números primos que se encuentran en toda materia, y seguridad criptográfica.

3.- ¿Por qué este problema no pudo resolverse anteriormente?
Esta fórmula yo la he creado, sin basarme en avances de ningún matemático. Esa es la razón por la cual la fórmula no se ha creado antes, ya que anteriores matemáticos se basaron en matemática existente y ya conocida; en cambio yo he pensado que existía matemática. Por ese motivo, también me apoyan matemáticos con esta teoría, de que todo el mundo quería ver la matemática desde otro punto de vista, usando la ya existente.

4.- ¿Quién fue tu supervisor, con quién trabajaste en este proyecto?
Yo la he creado, sin ayuda de nadie; porque yo me he salido de la universidad por 3 años con el propósito de crear la fórmula; además si hubiera pedido ayuda, tampoco me hubieran entendido. La fórmula es simple, pero para llegar a esta hubo un camino largo por recorrer, ya que fue esfuerzo y perseverancia.

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5.- ¿Cuál es el mensaje para todos los lectores del Journal of Latin American Sciences and Culture?
Esta fórmula que he creado, es muy importante porque ha sido buscada desde siempre; sin embargo, Riemann quería encontrar esta fórmula con su hipótesis (significa que también lo busco), pero yo he creado esta fórmula sin usar ningún concepto anterior, significa que es totalmente nueva. Realmente esta fórmula tiene infinitas aplicaciones, y aunque haga muchas cosas, quizás factorizar es más importante; ya que se usa en la criptografía, siendo un lenguaje de seguridad informática de internet.

6.- ¿Quién es su matemático favorito?
No tengo mucha afición por algún matemático, pero tengo mayor motivación por Johann Carl Friedrich Gauss; ya que ha estudiado los números primos y la logrado grandes descubrimientos, además provenía de una familia campesina.

7.- ¿Crees que es importante que las futuras generaciones se dediquen al estudio de las matemáticas? Si, es importante que las futuras generaciones se dediquen a la matemática ya que un poco está frenada; y al estar frenada es una traba que no deja dar un salto más grande todavía en la tecnología, la seguridad y en cualquier forma de supervivencia.

8.- ¿Cuáles son los planes después de que te gradúes?
Quiero seguir creando matemática, quiero apoyar a la juventud a creer en uno mismo y así pueda lograr investigar para hacer creer al mundo en la matemática; pues es muy importante que exista más investigación para usar formas de cambiar al mundo entero. Y también, claro trabajaré como ingeniero civil ayudando a verificar en el diseño de nuevos inventos tecnológicos.

9.- ¿Por qué crees que futuras generaciones debieran involucrarse con la ciencia y tecnología?
Quiero que sea un mundo diferente, que mejore el Internet y las tecnologías de comunicación con el propósito de estar cada vez más unidos en el mundo, realizar viajes al espacio y mientras más seamos los interesados en investigar, indiferente del área, podremos hacer crecer el mundo y quizás crear un nuevo planeta; con la tecnología que ya se conoce, pero puede mejorar gracias a investigaciones.

10.- ¿A quién dedicas este logro?
Dedico a todos los matemáticos del mundo, que perdieron la esperanza de conocer una nueva matemática, y a la juventud que empiece a creer en sí mismo, porque si una persona cree en lo que hace; realmente lo logrará tarde o temprano. Es hora de empezar de nuevo, creando matemática y viendo la forma de ayudar hasta al que no es matemático, de crear una fórmula que en el futuro puede ser usada.

11.- Tu mensaje final para los lectores del Journal
Aquí les muestro la fórmula que he encontrado, usa matemática sencilla,

pero es muy exacta en todo sentido, les recomiendo darle una revisada; pesé a que ya tengo una demostración formal, pero si usted ingresa al Excel el código mostrado, u otro programa puede ver la veracidad de la fórmula y garantizar que siempre será exacta. Prácticamente toda América latina ha verificado y lo han demostrado de manera analítica, y eso garantiza que no tendrá ningún error en toda su vida.

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Beimar Lopez Subia en compañía del Rector de La Universidad San Francisco Javier Dr. Sergio Padilla Cortez.

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Review article

Preliminary proposal to build a magnetic cancellation system for satellite magnetic tests in Venezuela

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Abstract: A very preliminary proposal to make up a system that cancels the magnetic field of Earth for executing satellite magnetic tests in Venezuela is made. Firstly, it is reviewed general satellite magnetic status considering electrical currents in it and possible magnetic domains in the structure and equipment is reviewed. After checking some magnetic cancellation systems, it is concluded that an optimal option to be selected is a Merritt 4-coil system because it offers good uniformity of magnetic field in a large relative volume. After some considerations and taking into account the usual size of a small satellite, the size of the coils should be around 32 meters. Finally, some considerations about the movement of the Earth's magnetic poles are taken into account.

Keywords: Merritt coils, magnetic field, magnetic moment, vertical component, horizontal component.

1. Introduction

The objective of this work is to establish which items would be taken into account to build a satellite magnetic test facility in Venezuela. Firstly, it is considered a general magnetic status of a satellite, specifically referred to small satellites, and then it is proposed a system of coils to cancel the Earth's magnetic field. Some basic calculations are executed to estimate the characteristics of these coils and then a system is proposed.

2. Materials and Methods

In a satellite, electrical currents circulate through equipment and cables. An electrical current generates a magnetic field perpendicular to the direction of the flow of the electrical current.

A framework of trajectories of electrical currents inside equipment and cables generates a satellite magnetic field, which is associated with different modes of operation of the satellite, creating a dipolar magnetic momentum of the satellite. Besides that, materials that make up a satellite can have a residual and permanent dipole magnetic momentum. Based on that, the satellites could be regarded as heterogeneous domains of magnetic dipoles. These magnetic dipoles can be added as independent vectors, generating a total dipolar magnetic momentum characteristic of the satellite under study. In the following figure this idea is presented:

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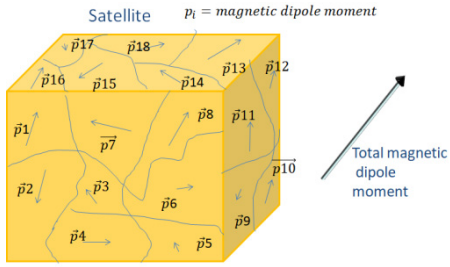

Figure 1. A very first approximation of the magnetic status of satellites.

In orbit, the Earth's magnetic field will exert a torque on the satellite because its total dipole magnetic moment has not been compensated or reduced. This torque will generate perturbations in the attitude of the satellite (its movement around its center of mass). So, in the process of development of the satellite, it is measured its total dipole magnetic moment and then it is compensated by installing small magnets on strategic places on the satellite. Consequently, it is necessary to measure the total magnetic moment of the satellite in a clean electromagnetic environment, which implies cancelling the Earth's magnetic field in the region in which the test is executed.

Based on this argument, the objective is to reduce the total dipole magnetic moment of the satellite. One way to achieve it is to submit the satellite to an oscillatory magnetic field at a high frequency. Thus, the magnetic dipoles get aligned from the different magnetic domains in opposite directions, such that the vector summations of the dipolar magnetic moments cancel each other. Then, the satellite magnetic moment should be made smaller.

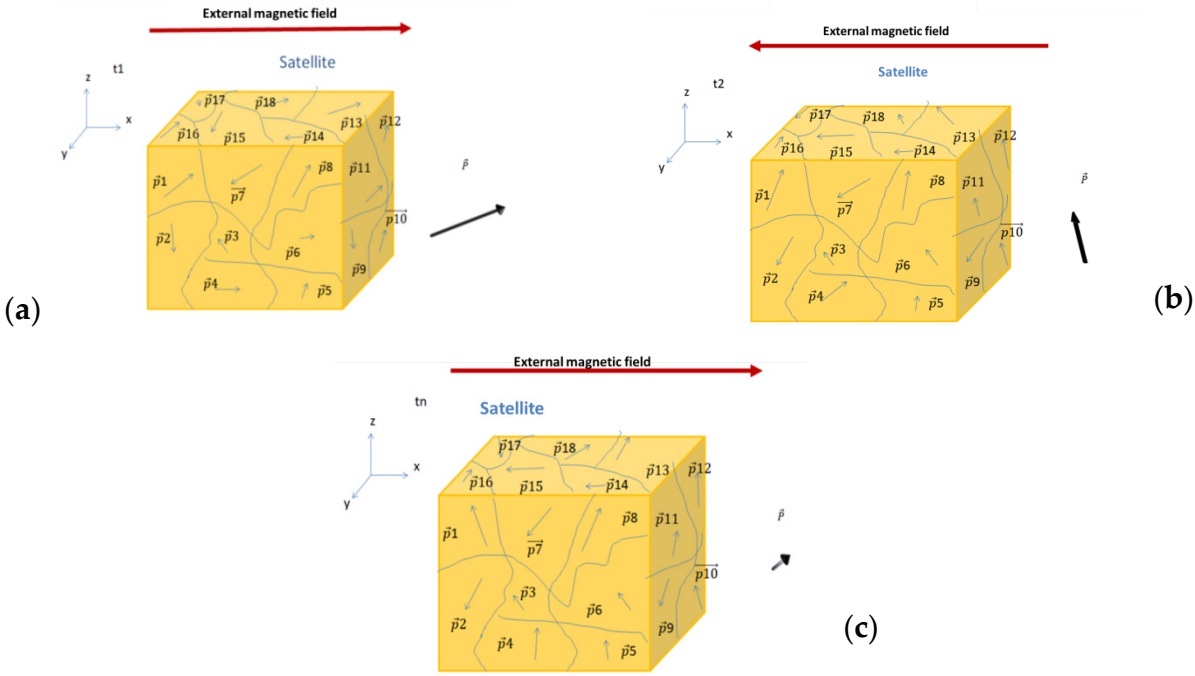

Figure 2. In (a), (b), (c) it is shown the sequence to reduce the total magnetic dipole moment of the satellite. It is assumed that the magnetic dipole moments change its direction when an external magnetic field is applied.

A graphical representation of this idea is presented: at the instant t1, the satellite is submitted to an external magnetic field in the X-direction; the dipolar magnetic moments from different magnetic domains would try to get alienated to the direction of the external magnetic field. Then, the direction of the external magnetic field is inverted and then the dipole moments of the satellite would try to get aligned again. The oscillatory magnetic field is executed at high frequency such that at the instant tn, after several cycles, the magnetic domains would be distributed approximately equally in +X and –X-directions. This operation is repeated in Y and Z.

As this study is concerning building a satellite magnetic test facility, it is necessary to consider that the magnetic environment near the equator differs from the magnetic environment in the north and south hemispheres. Thus, it wonders about the possible design of coils in order to remove the vertical and horizontal magnetic component of the Earth's magnetic field in a specified volume, in Venezuela.

3. Results

3.1. Propositions to cancel the Earth's magnetic field

It is proposed to build a magnetic test facility for small satellites at about 8 degrees latitude north. So, the vertical component of the Earth's magnetic field should be greater than the value on the equator.

In the beginning, it was considered three kinds of arrangement of coils to cancel the horizontal component of the Earth's magnetic field. These include Helmholtz coils, square coils, Merritt coils systems, and Ruben coils systems. From (Abbott, 2015; Herceg, Juhas, & Milutinov, 2009; Kirschvink, 1992; Magdaleno, Olivares, Campero, Escalera, & Blanco, 2010; Merritt, Purcell, & Stroink, 1983; Pourtau & Terral, 2005), and as we are interested in obtaining uniformity in the distribution of the magnetic flux density generated inside these coils, the Helmholtz coil and the square coils are not taken account. The Ruben coils system offers a good solution with respect to the uniformity of the magnetic flux density at the centre of the system. However, there are some results that discuss it and imply higher costs for building this system. Therefore, it is analyzed in this paper implementation of the Merritt coil system.

3.2. Values of Earth's magnetic field in Venezuela

Values of vertical component Hv and horizontal component Hh of the Earth's magnetic field in the probable facility location in Venezuela according to (" IGRF Model (13th Generation)", 2019) are:

$$Hv = 16.9\ \mu T \tag{1}$$

$$Hh = 27.15\ \mu T \tag{2}$$

According to these values, the magnitude of the vertical component of the Earth's magnetic field is not zero, nor is its value much smaller than the horizontal component. Therefore, it implies that the system of cancellation of the Earth's magnetic field as the vertical as the horizontal component should be similar.

3.3. Coil systems proposed

Previously, it was considered two kinds of system of coils: one for the cancellation of the vertical component and another for the cancellation of the horizontal one. However, as it has to achieve a uniformity of the magnetic flux density in a specific volume (in this volume is the satellite for executing the test) then, it has decided to choose the same kind of system of coils for the vertical component and the horizontal component.

According to (Herceg et al., 2009; Merritt et al., 1983), a Merritt

4-coil system provides a good uniformity of magnetic flux density, and it is a very well-known system in the scientific community. This system achieves a good uniformity in the magnetic flux density when the number of turns in the inner coil is 0.423514 times the number of turns in the outer coil. Also, the separations between inner coils and outer coils follow the next expressions:

$$a/d=0.12866 \tag{3}$$

$$b/d = 0.505492 \tag{4}$$

And the relationship between a, b and d is illustrated in the following figure:

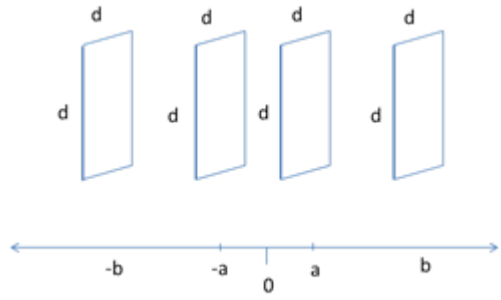

Figure 3. Illustration of arrangement of coils for cancellation the horizontal component of the Earth's magnetic field.

In the beginning, implementing a square coil system of three coils was considered. In that way, the uniformity of the magnetic flux density does not sacrifice, and costs would be reduced compared with an implementation of a four-coil system. However, uniformity in the magnetic flux density is a characteristic that must be assured.

Also, according to (Magdaleno et al., 2010), a Merritt 4-coil system, which d has a value of 89.75 cm and volume V of 730882.65 cm^3 according to their calculation, it is obtained a volume of 50 cm^3 of the uniform magnetic flux density inside this system. This is a ratio of just $6.84x10^{-5}$. Taking into account this architecture, if the size of the coil is adjusted to 32 m, then it is obtained:

$$V=2d^3\cdot 0.505492$$
$$V=33127.92\ m^3 \tag{5}$$

So, if d has a value of 32 m, then just a volume V of 2.26 m^3 should provide a uniform magnetic flux density. However, the dimensions of small satellites are very near to 1.31 m. Therefore, for this initial proposal, this value is used. Also, it has to be mentioned that according

to (Herceg et al., 2009; Kirschvink, 1992), the volume V associated with the uniformity of the magnetic flux density looks to be larger.

Taking into account the following equation to calculate the magnetic flux density B at the center of the system (Magdaleno et al., 2010):

$$B=(1.795\cdot10^{-6}\cdot N\cdot I)/d \quad (6)$$

It may be speculated that the value of the electrical current through one turn of the inner (I′) and outer (I) coils could be adjusted to 1.5 amperes, and d is 32 m. Then, the values for N, the number of turns for the outer coil, and consequently N′ the numbers of turns for the inner coil are related by (Herceg et al., 2009; Kirschvink, 1992):

$$N'\cdot I'/N\cdot I=0.423514 \quad (7)$$

Table 1. Numbers of turns for the coils.

Magnetic flux density	N (outer coil)	N′ (inner coil)
(Vertical component) 16.9 μT	200.85 ≈ 201	85.06 ≈ 85
(Horizontal component) 27.15 μT	322.67 ≈ 323	136.65 ≈ 137

If the direction of the axis in figure 3 is parallel to the direction of the Earth's magnetic field according to the direction of a compass, this work proposes an arrangement of coils oriented vertically to cancel the vertical component of the Earth's magnetic field. The following figure illustrates this idea. It is noted that the value of d should be the same for the horizontal and vertical orientations.

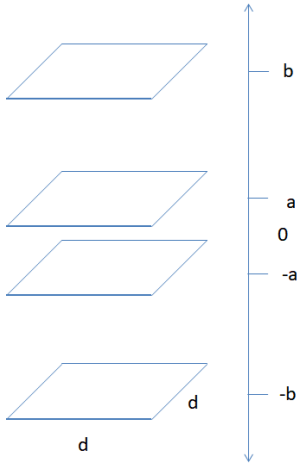

Figure 4. Illustration of arrangement of coils for cancellation the horizontal component of the Earth's magnetic field.

3.4. Other considerations

Until this moment, just two sets of Merritt 4-coils have been considered: one set to cancel the vertical component of the Earth's magnetic field and another one to cancel the horizontal component of the Earth's magnetic field because the arrangement of the coils would be built such as these are aligned to the direction of the north magnetic pole. This supposition does not take into account a scenario in which the Earth's magnetic poles move (Witze, 2019).

Based on that, it is suggested to add a third set of Merritt 4-coils to be used to compensate for changes in the direction of the horizontal component of the Earth's magnetic field. However, at this moment, it cannot be assured what kind of coils could be utilized and its characteristics such that accomplish uniformity in a generated magnetic flux density.

Also, additional reviews must be done related to power consumption, electrical resistances of coils, inductances, and other parameters related to magnetic dipole moment (Abbott, 2015; Lackey, 1968; Mehlem, 1978).

4. Discussions

After considering different kinds of coil systems, the Merritt 4-coil system is suitable to cancel the Earth's magnetic field. We could have considered Merritt's 3-coils system to cancel the vertical component of the Earth's magnetic field to reduce costs. However, it would imply reducing the uniformity of magnetic flux density generated inside coils, which could conduct non-suitable magnetic measurements on satellites under study. Additional studies related to what kind of materials could be used to build the system, the generation system for the electrical current, vibrations of the coils, and other issues have to be executed.

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