

CIENCIAS HUMANAS:

POLÍTICA DE DIÁLOGO Y COLABORACIÓN

Fabiano Eloy Afílio Batista
Glauber Soares Junior
Ítalo José de Madeiros Dantas
(Organizadores)

6



CIENCIAS HUMANAS:

POLÍTICA DE DIÁLOGO Y COLABORACIÓN

Fabiano Eloy Afílio Batista
Glauber Soares Junior
Ítalo José de Madeiros Dantas
(Organizadores)

6



Editora chefe

Profª Drª Antonella Carvalho de Oliveira

Editora executiva

Natalia Oliveira

Assistente editorial

Flávia Roberta Barão

Bibliotecária

Janaina Ramos

Projeto gráfico

Bruno Oliveira

Camila Alves de Cremo

Luiza Alves Batista

Natália Sandrini de Azevedo

Imagens da capa

iStock

Edição de arte

Luiza Alves Batista

2022 by Atena Editora

Copyright © Atena Editora

Copyright do texto © 2022 Os autores

Copyright da edição © 2022 Atena Editora

Direitos para esta edição cedidos à Atena Editora pelos autores.

Open access publication by Atena Editora



Todo o conteúdo deste livro está licenciado sob uma Licença de Atribuição *Creative Commons*. Atribuição-Não-Comercial-NãoDerivativos 4.0 Internacional (CC BY-NC-ND 4.0).

O conteúdo dos artigos e seus dados em sua forma, correção e confiabilidade são de responsabilidade exclusiva dos autores, inclusive não representam necessariamente a posição oficial da Atena Editora. Permitido o *download* da obra e o compartilhamento desde que sejam atribuídos créditos aos autores, mas sem a possibilidade de alterá-la de nenhuma forma ou utilizá-la para fins comerciais.

Todos os manuscritos foram previamente submetidos à avaliação cega pelos pares, membros do Conselho Editorial desta Editora, tendo sido aprovados para a publicação com base em critérios de neutralidade e imparcialidade acadêmica.

A Atena Editora é comprometida em garantir a integridade editorial em todas as etapas do processo de publicação, evitando plágio, dados ou resultados fraudulentos e impedindo que interesses financeiros comprometam os padrões éticos da publicação. Situações suspeitas de má conduta científica serão investigadas sob o mais alto padrão de rigor acadêmico e ético.

Conselho Editorial**Ciências Humanas e Sociais Aplicadas**

Prof. Dr. Adilson Tadeu Basquerote Silva – Universidade para o Desenvolvimento do Alto Vale do Itajaí

Prof. Dr. Alexandre de Freitas Carneiro – Universidade Federal de Rondônia

Prof. Dr. Alexandre Jose Schumacher – Instituto Federal de Educação, Ciência e Tecnologia do Paraná

Prof. Dr. Américo Junior Nunes da Silva – Universidade do Estado da Bahia

Profª Drª Ana Maria Aguiar Frias – Universidade de Évora

Profª Drª Andréa Cristina Marques de Araújo – Universidade Fernando Pessoa



Prof. Dr. Antonio Carlos da Silva – Universidade Católica do Salvador
Prof. Dr. Antonio Carlos Frasson – Universidade Tecnológica Federal do Paraná
Prof. Dr. Antonio Gasparetto Júnior – Instituto Federal do Sudeste de Minas Gerais
Prof. Dr. Antonio Isidro-Filho – Universidade de Brasília
Prof. Dr. Arnaldo Oliveira Souza Júnior – Universidade Federal do Piauí
Prof. Dr. Carlos Antonio de Souza Moraes – Universidade Federal Fluminense
Prof. Dr. Crisóstomo Lima do Nascimento – Universidade Federal Fluminense
Prof^ª Dr^ª Cristina Gaio – Universidade de Lisboa
Prof. Dr. Daniel Richard Sant’Ana – Universidade de Brasília
Prof. Dr. Deyvison de Lima Oliveira – Universidade Federal de Rondônia
Prof^ª Dr^ª Dilma Antunes Silva – Universidade Federal de São Paulo
Prof. Dr. Edvaldo Antunes de Farias – Universidade Estácio de Sá
Prof. Dr. Elson Ferreira Costa – Universidade do Estado do Pará
Prof. Dr. Eloi Martins Senhora – Universidade Federal de Roraima
Prof. Dr. Gustavo Henrique Cepolini Ferreira – Universidade Estadual de Montes Claros
Prof. Dr. Humberto Costa – Universidade Federal do Paraná
Prof^ª Dr^ª Ivone Goulart Lopes – Istituto Internazionele delle Figlie de Maria Ausiliatrice
Prof. Dr. Jadilson Marinho da Silva – Secretaria de Educação de Pernambuco
Prof. Dr. Jadson Correia de Oliveira – Universidade Católica do Salvador
Prof. Dr. José Luis Montesillo-Cedillo – Universidad Autónoma del Estado de México
Prof. Dr. Julio Candido de Meirelles Junior – Universidade Federal Fluminense
Prof. Dr. Kárpio Márcio de Siqueira – Universidade do Estado da Bahia
Prof^ª Dr^ª Keyla Christina Almeida Portela – Instituto Federal do Paraná
Prof^ª Dr^ª Lina Maria Gonçalves – Universidade Federal do Tocantins
Prof^ª Dr^ª Lucicleia Barreto Queiroz – Universidade Federal do Acre
Prof. Dr. Luis Ricardo Fernandes da Costa – Universidade Estadual de Montes Claros
Prof. Dr. Lucio Marques Vieira Souza – Universidade do Estado de Minas Gerais
Prof^ª Dr^ª Natiéli Piovesan – Instituto Federal do Rio Grande do Norte
Prof^ª Dr^ª Marianne Sousa Barbosa – Universidade Federal de Campina Grande
Prof. Dr. Marcelo Pereira da Silva – Pontifícia Universidade Católica de Campinas
Prof^ª Dr^ª Maria Luzia da Silva Santana – Universidade Federal de Mato Grosso do Sul
Prof. Dr. Miguel Rodrigues Netto – Universidade do Estado de Mato Grosso
Prof. Dr. Pedro Henrique Máximo Pereira – Universidade Estadual de Goiás
Prof. Dr. Pablo Ricardo de Lima Falcão – Universidade de Pernambuco
Prof^ª Dr^ª Paola Andressa Scortegagna – Universidade Estadual de Ponta Grossa
Prof^ª Dr^ª Rita de Cássia da Silva Oliveira – Universidade Estadual de Ponta Grossa
Prof. Dr. Rui Maia Diamantino – Universidade Salvador
Prof. Dr. Saulo Cerqueira de Aguiar Soares – Universidade Federal do Piauí
Prof. Dr. Urandi João Rodrigues Junior – Universidade Federal do Oeste do Pará
Prof^ª Dr^ª Vanessa Bordin Viera – Universidade Federal de Campina Grande
Prof^ª Dr^ª Vanessa Ribeiro Simon Cavalcanti – Universidade Católica do Salvador
Prof. Dr. William Cleber Domingues Silva – Universidade Federal Rural do Rio de Janeiro
Prof. Dr. Willian Douglas Guilherme – Universidade Federal do Tocantins



Ciencias humanas: política de diálogo y colaboración 6

Diagramação: Camila Alves de Cremo
Correção: Maiara Ferreira
Indexação: Amanda Kelly da Costa Veiga
Revisão: Os autores
Organizadores: Fabiano Eloy Atílio Batista
Glauber Soares Junior
Ítalo José de Madeiros Dantas

Dados Internacionais de Catalogação na Publicação (CIP)

C569 Ciências humanas: política de diálogo y colaboración 6 / Organizadores Fabiano Eloy Atílio Batista, Glauber Soares Junior, Ítalo José de Madeiros Dantas. – Ponta Grossa - PR: Atena, 2022.

Formato: PDF

Requisitos de sistema: Adobe Acrobat Reader

Modo de acesso: World Wide Web

Inclui bibliografia

ISBN 978-65-258-0587-0

DOI: <https://doi.org/10.22533/at.ed.870221910>

1. Ciências humanas. I. Batista, Fabiano Eloy Atílio (Organizador). II. Soares Junior, Glauber (Organizador). III. Dantas, Ítalo José de Madeiros (Organizador). IV. Título.

CDD 101

Elaborado por Bibliotecária Janaina Ramos – CRB-8/9166

Atena Editora
Ponta Grossa – Paraná – Brasil
Telefone: +55 (42) 3323-5493
www.atenaeditora.com.br
contato@atenaeditora.com.br



DECLARAÇÃO DOS AUTORES

Os autores desta obra: 1. Atestam não possuir qualquer interesse comercial que constitua um conflito de interesses em relação ao artigo científico publicado; 2. Declaram que participaram ativamente da construção dos respectivos manuscritos, preferencialmente na: a) Concepção do estudo, e/ou aquisição de dados, e/ou análise e interpretação de dados; b) Elaboração do artigo ou revisão com vistas a tornar o material intelectualmente relevante; c) Aprovação final do manuscrito para submissão.; 3. Certificam que os artigos científicos publicados estão completamente isentos de dados e/ou resultados fraudulentos; 4. Confirmam a citação e a referência correta de todos os dados e de interpretações de dados de outras pesquisas; 5. Reconhecem terem informado todas as fontes de financiamento recebidas para a consecução da pesquisa; 6. Autorizam a edição da obra, que incluem os registros de ficha catalográfica, ISBN, DOI e demais indexadores, projeto visual e criação de capa, diagramação de miolo, assim como lançamento e divulgação da mesma conforme critérios da Atena Editora.



DECLARAÇÃO DA EDITORA

A Atena Editora declara, para os devidos fins de direito, que: 1. A presente publicação constitui apenas transferência temporária dos direitos autorais, direito sobre a publicação, inclusive não constitui responsabilidade solidária na criação dos manuscritos publicados, nos termos previstos na Lei sobre direitos autorais (Lei 9610/98), no art. 184 do Código penal e no art. 927 do Código Civil; 2. Autoriza e incentiva os autores a assinarem contratos com repositórios institucionais, com fins exclusivos de divulgação da obra, desde que com o devido reconhecimento de autoria e edição e sem qualquer finalidade comercial; 3. Todos os e-book são *open access*, *desta forma* não os comercializa em seu site, sites parceiros, plataformas de *e-commerce*, ou qualquer outro meio virtual ou físico, portanto, está isenta de repasses de direitos autorais aos autores; 4. Todos os membros do conselho editorial são doutores e vinculados a instituições de ensino superior públicas, conforme recomendação da CAPES para obtenção do Qualis livro; 5. Não cede, comercializa ou autoriza a utilização dos nomes e e-mails dos autores, bem como nenhum outro dado dos mesmos, para qualquer finalidade que não o escopo da divulgação desta obra.



APRESENTAÇÃO

Estimados leitores e leitoras;

Em sua sexta edição, a obra **‘Ciencias humanas: política de diálogo y colaboración 6’** busca suscitar uma continuidade das discussões no entorno de questões que abrangem problemáticas sociais e culturais, apresentando um conjunto de artigos que possuem perspectivas teóricas e metodológicas centradas em discussões interdisciplinares, multidisciplinares e transversais.

Esta edição possui em seu conjunto 16 textos escritos em três idiomas – espanhol, inglês e português – que estabelecem um importante diálogo entre pesquisas e pesquisadores que analisam diferentes contextos da sociedade latino-americana. Esses textos auxiliam na formação de indagações e explicações que desvelam as dificuldades encontradas e as atuações das ciências humanas e sociais, sobretudo, salientando as possíveis e necessárias articulações entre o campo acadêmico-científico e a sociedade no geral.

Entre as temáticas evidenciadas, destacam-se a área da educação que é investigada por distintas óticas, que abordam sobretudo, a categoria inovação social. Tem-se pesquisas que focalizam a análise de currículo escolar; desenvolvimento de guias, instrumentos educativos e metodologias, em especial apresentando estratégias desenvolvidas para o enfrentamento da covid-19 no que toca ao estabelecimento de aulas no formato online. Discute-se aspectos relacionados ao processo de docência, em específico, no que tange ao processo de planejamento e na articulação entre ensino com a inteligência emocional.

São também expostas investigações que ressaltam aspectos vinculados a psicologia no processo de ensino-aprendizagem, explicitando temáticas como a saúde mental de crianças com hiperatividade; a ligação do desempenho escolar com a exclusão da figura paterna; e a influência da escrita no funcionamento do cérebro. Ainda, são evidenciados manuscritos que investigam produtos culturais – literatura, série televisiva e o futebol – na perspectiva da educação e da identidade cultural. Por fim, também perpassa por esse compilado um artigo que observa a relação do turismo com a paisagem local.

A todos e todas, esperamos que gostem e que tenham uma agradável leitura!

Fabiano Eloy Atílio Batista

Glauber Soares Junior

Ítalo José de Madeiros Dantas

SUMÁRIO

CAPÍTULO 1..... 1

¿FÚTBOL GAUCHO? LA IDENTIDAD REGIONAL RIO-GRANDENSE EN LA CANCHA (1967-1972)

Cesar Augusto Barcellos Guazzelli

 <https://doi.org/10.22533/at.ed.8702219101>

CAPÍTULO 2..... 12

ADAPTING TO ONLINE EDUCATION THROUGH PROJECT-BASED LEARNING IN A COMPLEX REMOTE ZONE. (MAGALLANES /CHILE)


Berta Vivar

Jorge Villarroel

Yasna Segura

Claudio Villarreal


Claudia Ojeda

 <https://doi.org/10.22533/at.ed.8702219102>

CAPÍTULO 3..... 24

CREACIÓN DE UNA GUÍA PARA LAS PRÁCTICAS DE LA ASIGNATURA DE MÁQUINAS ELÉCTRICAS I EN EL ENTORNO E-LEARNING


Carlos Wilfredo Oré Huarcaya

 <https://doi.org/10.22533/at.ed.8702219103>

CAPÍTULO 4..... 30

DIAGNÓSTICO DE ACTUALIZACIÓN CURRICULAR DEL TRONCO BÁSICO DE ÁREA, DEL ÁREA DE CIENCIAS SOCIALES Y HUMANIDADES DE LA UNIVERSIDAD AUTÓNOMA DE NAYARIT


Almendra Carolina Heredia Palomares

 <https://doi.org/10.22533/at.ed.8702219104>

CAPÍTULO 5..... 38

EL JUGADOR DEL REALISMO MÁGICO

Jaime Andrés Tauta Chaparro


 <https://doi.org/10.22533/at.ed.8702219105>

CAPÍTULO 6..... 48

INTELIGENCIA EMOCIONAL EN LOS DOCENTES COMO APOYO PARA LOS ALUMNOS DURANTE LAS CLASES

Griselda Patricia Reyna Lara

María Paulina Mejía Velázquez

 <https://doi.org/10.22533/at.ed.8702219106>

CAPÍTULO 7..... 68

KAHOOT AS AN EDUCATIONAL TOOL FOR THE MULTIMODAL TEACHING OF

CAPÍTULO 8..... 76


LA MIRADA DE LOS ESTUDIANTES SOBRE LA COMPRENSIÓN AUDITIVA A TRAVÉS DE SERIES TELEVISIVAS

Norma Flores-González

Efigenia Flores-González

Oscar Ivan Flores Mendoza

Karla Angélica Mercado Olmos

 <https://doi.org/10.22533/at.ed.8702219108>

CAPÍTULO 9..... 85


LA SALUD MENTAL EN NIÑOS CON HIPERACTIVIDAD EN EL RAZONAMIENTO MATEMÁTICO

Diana Carolina Arriaga León

Estoica Yanela Cedeño Tomalá

Katiuska Guillermina Cedeño Tomalá

Douglas Daniel Díaz Torres

 <https://doi.org/10.22533/at.ed.8702219109>


CAPÍTULO 10..... 94

LA INNOVACIÓN EDUCATIVA Y SU RELACIÓN CON EL EFECTO EN LA DESERCIÓN ESCOLAR EN TIEMPOS DE PANDEMIA, A TRAVÉS DE CLASES VIRTUALES EN UNA INSTITUCIÓN EDUCATIVA MEDIA SUPERIOR DE LA URN EN CD. JUÁREZ, CHIH

Eduardo Vaquera de la Torre

Humberto Arreola Leyva


Agustín Rodríguez Flores

 <https://doi.org/10.22533/at.ed.87022191010>

CAPÍTULO 11..... 102

NEUROESCRITURA: DE CÓMO LA ESCRITURA CAMBIA LA ESTRUCTURA Y LA FUNCIÓN DEL CEREBRO


Carlisle González Tapia





 <https://doi.org/10.22533/at.ed.87022191011>

CAPÍTULO 12..... 116

O FRACASSO ESCOLAR PELA EXCLUSÃO DA FIGURA PATERNA E A PSICOPEDAGOGIA SISTÊMICA

Elane da Rocha Nogueira Barros

 <https://doi.org/10.22533/at.ed.87022191012>

CAPÍTULO 13.....	132
PAISAJE Y TURISMO: UN BINOMIO INSEPARABLE	
Eduardo Salinas Chávez	
Alberto Enrique García Rivero	
Bárbara Liz Miravet	
 https://doi.org/10.22533/at.ed.87022191013	
CAPÍTULO 14.....	145
PERCEPCIONES SOBRE LAS CAPACIDADES PLANIFICADORAS EN PROFESORAS DE NIVEL SUPERIOR, UN ESTUDIO DE CASO	
Fabiola Escobar Moreno	
 https://doi.org/10.22533/at.ed.87022191014	
CAPÍTULO 15.....	160
PROPUESTA DE UNA ESTRATEGIA EDUCATIVA PARA ESTUDIANTES DE LICENCIATURA DE LA FACULTAD DE ENFERMERÍA N°2 DE LA UNIVERSIDAD AUTÓNOMA DE GUERRERO PARA EL DESARROLLO DE LA COMPETENCIA QUE LES PERMITA LA VALORACIÓN DE LOS SÍNDROMES DEMENCIALES EN PACIENTES GERONTOGERIÁTRICOS	
Patricia Ramírez Martínez	
Maximina Gil Nava	
María Leticia Abarca Gutiérrez	
José Fausto Solís Martínez	
 https://doi.org/10.22533/at.ed.87022191015	
CAPÍTULO 16.....	182
RETROALIMENTACIÓN DE LA EVALUACIÓN PARA EL APRENDIZAJE	
Brígida Santana Güilamo	
 https://doi.org/10.22533/at.ed.87022191016	
SOBRE OS ORGANIZADORES	189
ÍNDICE REMISSIVO.....	190

CAPÍTULO 2

ADAPTING TO ONLINE EDUCATION THROUGH PROJECT-BASED LEARNING IN A COMPLEX REMOTE ZONE. (MAGALLANES /CHILE)

Data de aceite: 03/10/2022

Berta Vivar

Departamento de Ingeniería en Construcción,
Facultad de Ingeniería, Punta Arenas, Chile

Jorge Villarroel

Departamento de Ingeniería en Construcción,
Facultad de Ingeniería, Punta Arenas, Chile

Yasna Segura

Departamento de Ingeniería en Construcción,
Facultad de Ingeniería, Punta Arenas, Chile

Claudio Villarreal

Departamento de Ingeniería en Construcción,
Facultad de Ingeniería, Punta Arenas, Chile

Claudia Ojeda

Departamento de Arquitectura, Facultad de
Ingeniería, Punta Arenas, Chile

ABSTRACT: Faced with the health emergency caused by the SARS-CoV-2 virus, the Chilean government declared a state of catastrophe due to public calamity throughout Chilean territory. The University of Magallanes, since the beginning of the 2020 academic year, has since been reinstated by online classes. Accelerated changes and modifications have been motivated in the development of theoretical and practical classes in laboratories, both for academics and students of course of Construction Engineering, thus adapting to this new form and facing the learning of ingenuity from the intimate spaces of their homes. The purpose of this research

was to evaluate the learning process carried out during the academic period, as well as the effectiveness of the implementation of the learning process, learning in a virtual model of the design of the courses of General Construction (GC) and Structural Analysis I (SA-I). One of the ways to know the student's perception of the implementation of the virtual learning were taking a final survey on both subjects, that evaluated the criteria of internet quality, satisfaction with the activity carried out, and the quality of the item. In the course General Construction, the laboratory was evaluated using the construction development of prototype of a house carried out through collaborative work through a project located in a e-cloud, determined in stages, surveys about of the performance of the students were around of 90.9% of approbation. For the Structural Analysis I teaching methodology, "Design Thinking" was used. The activity consists of making models with accessible materials in their home and of which the structural models differ just these two, an inverted catenary and a suspension bridge. The evaluation was carried on by creating a video with teacher feedback; surveys reveal that students evaluation were about of 72.7% of approbation. The final impression was positive, and the department is trying to improve the methodology the following semester.

KEYWORDS: Online classes; Construction Engineering; Assessment; Project Based Learning.

1 | INTRODUCTION

Given the health emergency caused by the SARS-CoV-2 virus, the Economic Commission for Latin America and the Caribbean (ECLAC) indicates that in the field of education, a large part of the measures adopted by the countries of the region in response to the crisis was the suspension of face-to-face classes at all levels, which has given rise to the deployment of distance learning modalities, using a variety of formats and platforms (with or without the use of technology)(NU.CEPAL, 2020).

With the arrival of the pandemic, the challenge worldwide was to face the transition and subsequent adaptation of face-to-face classes by teleworking in universities. University of Magallanes has had the Virtual Development Unit (UDV) since 2014, which was born out of the need to have an educational option in the field of undergraduate, postgraduate and continuing education for those located in geographically dispersed locations, in order to support professional development and updating among its guidelines are those of defining policies that allow for the successful administration and development of academic programs in E-learning and B-learning modalities. Currently, the most widely used tools for the Construction Engineering degree are the Moodle© platform (UMAG, 2020b) y Google Drive©.

In 2017, academics staff from the Faculty of Engineering (FI-UMag) to promote the use of problem-based learning (PBL) in lessons and improve relevant aspects, such as linking with the environment, incorporating real problems, techniques that involve comprehensive development and strengthen soft skills and consider the opinions of local industry (Lagos et al., 2018). Several academics were trained and indicated that PBL activities have been used in their classes for some time and on a regular basis, but they were unaware of the concept. The use of PBL dates back to before the pandemic, as it poses a problem and develops problem-solving skills through self-directed learning. (González & del Valle López, 2008)(Barrows, 1986). This methodology is used in the General Construction (GC) subject and the E-Portfolio, a folder stored in Virtual Undergraduate or Google Drive©, was used as an evaluation element in the virtual environment, with the aim of assessing the evolution of the performance of the future engineer through the exchange of learning files and the use of collaborative work tools. (Tapia Saucedo, 2013).

Another methodology used is Design Thinking (DT) which focuses on problem solving and applies to any field that requires a creative approach, which allows working in multidisciplinary teams to develop solutions in an open and collaborative way; it stimulates cooperation and creativity and breaks with established ideas to generate new innovative options to address problems or improve situations. Globally it has become an indispensable method in the innovation process. It is used in companies such as Apple©, General Electric© and Philips©, among others, and Design Thinking is currently widely applied in business schools and innovation centres of universities such as Stanford, Berkeley and MTI, among

many others. (Levine et al., 2016) (Mabogunje et al., 2016).

In addition to spreading the DT methodology beyond engineering disciplines, and involving students in projects with a strong social impact, programs are increasingly harnessing the potential of the Internet and social media platforms to support open innovation processes on a larger scale (Steinbeck, 2011). This methodology was used in the Structural Analysis I (SA-I) course and the form of evaluation was the use of video, which should provoke debate in the student when delivering the contents and analysis of what was requested by the academic staff (Jackson et al., 2013), i.e. learners should be able to express knowledge, understanding and reflection of the content (Campbell et al., 2019).

The development of virtual classrooms has made the vulnerability of broad social sectors, including the education sector, more visible (Llerena L. & Sánchez N., 2020). The strategies generated by UMAG were to provide internet accessibility and equipment to students with problems and to be able to develop virtual classes.

There are 3.6 million fixed internet accesses in Chile, an annual growth of 5.5%, and 32.8% of these are through fiber optic technology, according to the latest statistical series of the Sub-secretariat of Telecommunications (SUBTEL) for the first half of 2020 (SUBTEL, 2020). In Magallanes region, the quality of internet and fixed high-speed services continues to show the already known deficiencies, such as a gradual decrease in internet speed and availability in certain sectors of Punta Arenas and nearby localities, in the survey of GC and SA-I students it is highlighted that the main problems are highly variable internet speed and external factors, especially climatic ones.

Under these conditions, both student-teacher parties had to adjust to the changes and request technological support. In addition, we should mention that in the Magallanes region we were in an extensive territorial quarantine reaching 114 days, this caused a lack of motivation in the students to develop some key soft skills for the development of practical activities.

This work aims to analyze the teaching-learning adaptation of the practical lessons to a virtual modality in the courses of General Construction (GC) and Structural Analysis I (SA-I). The following activities were carried out: literature review, application of an instrument to measure satisfaction with the virtual classes and evaluation, the results and conclusions are presented.

2 | METHODOLOGY

2.1 Subjects characteristics

The Construction Engineering course is based on the guidelines of the Educational Project for Institutions (PEDI), which is based on three pillars: education in values, education centered on learning and relevant education, all of which have a formative focus on competences, which are grouped into two categories, generic competences and specific

competences (E) whose level of performance (N) establishes the depth, scope and precision of the expected learning. (UMAG, 2014).

Table 1 shows the specific competences (E) of the 2 courses that will be analyzed from the theoretical-practical integration. The “practical” part increases knowledge by means of laboratory and/or workshops contextualizing the environment in which the future professional will be situated (UMAG, 2020a). In the GC subject, students demonstrate general knowledge of construction processes and codes governing the construction industry and the SA-I course aims for students to determine reactions and internal stress diagrams, be able to understand the way of working and analysis of hyperstatic structures, to apply design methods and calculation of combined structural elements.

Subjects	CT*	Cód.	Competence Involved
General Construction (GC)	3	E2	Design, conduct and perform experiments as well as analyze and interpret their results.
		E4	Works in multidisciplinary teams.
Structural Analysis I (SA-I)	3	E1	Applied mathematics, scientific and engineering knowledge
		E5	Identifies, formulates, and solves engineering problems.

*Transferable Credits

Table 1. Specific competences (E) of the courses.

2.2 Attendances

The students in the target population are in the 2nd and 3rd year. In the Table 2. shows the number of students for each subject, the number of students by gender, age range and pass rates.

Subjects	Number			Age			% Approval
	Total	Men(%)	Women(%)	19-20	21-22	23-24	
General Construction (GC)	11	81,2	18,2	67 %	11 %	22 %	90,9
Structural Analysis I (SA-I)	11	72,7	27,3	7%	50%	43 %	72,7

** Obtained data Educational Information System (EIS), UMAG.

Table 2. Number of students for each subject.**

In addition, it was determined that most students live in the city of Punta Arenas with 93% of the total, while 7% live in Natales (see Figure 1.). In the Figure 2 shows the geographical location of the two cities, which are 248 km apart.

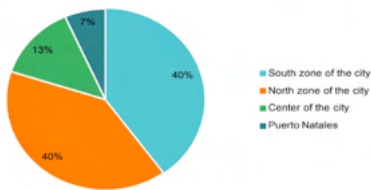


Figure 1. Area of the city of Punta Arenas where the students took their classes.



Figure 2. Location of the Magallanes region. (COMAPA, 2017)

Then, the researchers show a model to determine the reliability of a measurement instrument by applying Cronbach’s alpha coefficient and using an Excel© spreadsheet for data analysis. A questionnaire with five questions and five response options, using Likert scale (1. Never, 2. Occasionally, 3. Sometimes, 4. Frequently, 5. Always) and 13 questions with Linkert scale (1. Very Dissatisfied, 2. Dissatisfied, 3. Neither Satisfied/Nor Dissatisfied, 4. Satisfied, 5.) The coefficient values for GC of $\alpha = 0.93$ and SA-I $\alpha = 0.89$ indicate excellent internal consistency. (Cronbach, 1951)(Frias-Navarro, 2020)

2.3 Student attendance online classes

To know the participation of the students in the virtual classes, a survey was carried out by means of a Google© form at the end of the academic year, whose objective was to know the type of connection and how they developed their learning from virtuality, it is highlighted that 80% of the students had a fixed internet plan at home and at work and used a laptop. When they lost the connection, 73% of the students answered that they went to someone else’s home to solve the problem. In addition, if students were unable to participate in class, 27% in asynchronous way and 53% “got together with their classmates for the subjects they had missed”.

Figure 3. shows the assessment of the main factors that affected the students when they entered the virtual class. It is highlighted that the main problems are the very variable internet speed and external factors, especially weather.

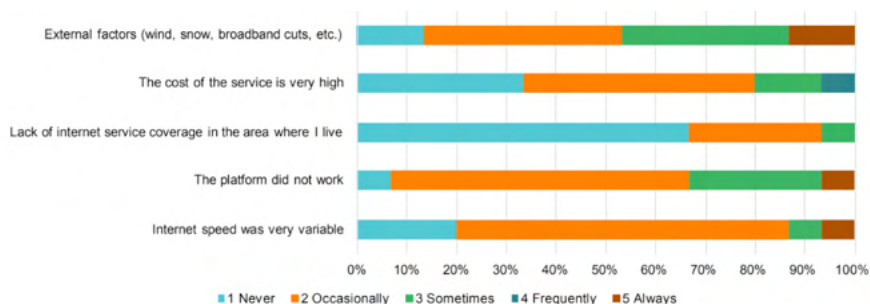


Figure 3. Estimation of the main factors that affected the students.

A satisfaction survey was carried out with the students in the practical virtual classes of both subjects AE-1 and CG, to determine whether the students recognize any difference in learning in the online modality. In this second section, it was evaluated whether the practical work of the subject was useful, entertaining, could be done in groups, helped to consolidate knowledge and was a good complement to the theory; the load was adequate, the help and follow-up were sufficient and whether the wording was clear.

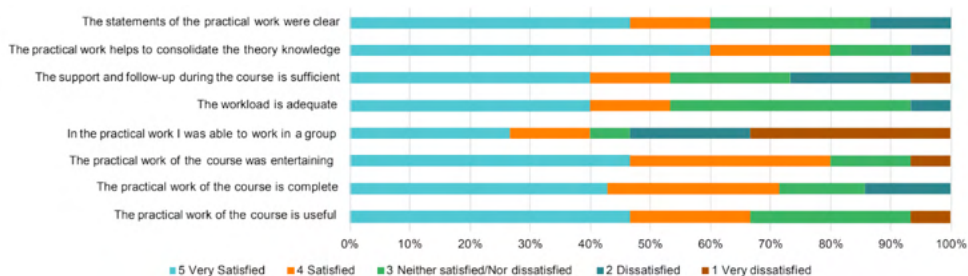


Figure 4. Degree of satisfaction of the practical virtual classes GC and SA-I.

Shows that the students rated the practical part of the course positively, being a complement to the theory and an entertaining activity, reaching 80%. Regarding the tasks to be carried out, they were clear, reaching 60%, and the workload was adequate, reaching 55%. The alternative with the lowest evaluation corresponds to teamwork, which only reached 40% between very satisfied and satisfied.

2.4 Satisfaction with the practical virtual classes

For the GC subject, the survey had a third section, which asked about satisfaction using a framework that sets out criteria and standards for different levels of performance and describes what performance would look like at each level called rubric. The rubric is an element created for normal class periods and was used in the same way during the pandemic, which is why it can be highlighted that the students in general terms are very satisfied, as can be seen in Figure 5. , the rubric served as a guide for them to prepare their work, providing the main elements to develop, expressing 85% satisfaction. In addition, the guideline was easy to understand and helped them to improve their work, both statements reach 72% satisfaction.

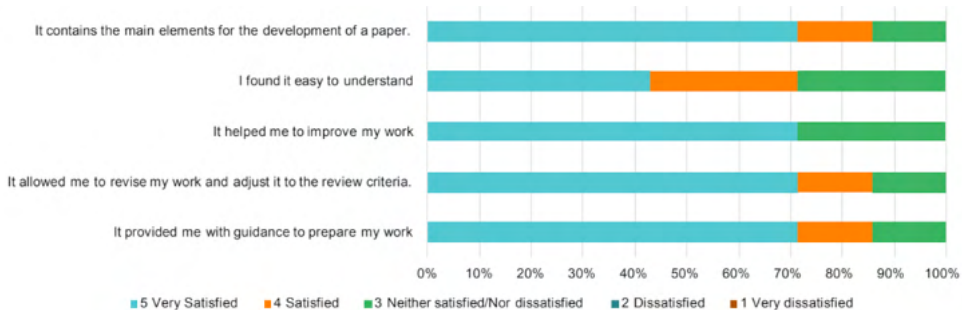


Figure 5. Degree of satisfaction of the rubric of the GC laboratory classes.

2.5 Assessment guideline

Each subject was supported in the virtual classroom of the UMAG Campus - Virtual Undergraduate (Moodle©), Google Drive© and Classroom© where instructions, news, contents, guides, and evaluation were coordinated in a general way. In short, a technological variety has been created for the development of collaborative work. The virtual classes were held via Meet©.

The practical part of the GC subject is based on the application of a PBL type activity and in virtuality the evaluation was carried out through the use of E-Portfolio as described below: “the housing deficit in the region of Magallanes and Chilean Antarctic, according to the CASEN survey 2017 was 3.601units. (CChC, 2018); to improve this index and increase the amount of employment by COVID-19, the state has invested in the last year \$36 MM for the construction of 1,225 social housing units in 11 lots. (MINVU, 2020). In spite of this, the deficit continues. Based on this problem, the construction engineer, owner of a construction company, must design the housing solution for those citizens who cannot access state housing subsidies. For this, they must take into account the following: i) Surface area of the dwelling, ii) Construction systems and types of materials and iii) Project execution time”. The use of E-Portfolio is an appropriate tool to consolidate collaborative learning and facilitates academic work. This activity was called “Construction of a single-family house”, the purpose of which is to keep learning resources, feedback and the students’ entry record updated during the semester.

In the subject SA-I, the practical part is based on the application of an activity using Design Thinking “For the application of this teaching model, the student must answer the following question: What is the difference between an inverted catenary and a suspension bridge? To answer this question, each student must study both structural models, propose the design of two structures, one using the inverted catenary as a model and the other one must correspond to a suspension structure, both designs must support a load of 1 kg. The models shall be made with materials of your choice”. The virtual assessment was carried out

by means of a video, in which the student had to edit and explain the difference between the two structural systems, what each of the designed models consists of, how it was executed and demonstrate that the models can withstand the requested load. As a result of the results obtained, the students had to draw their own conclusions, which were later discussed in class together with the other students, guided by the teacher.

3 | EXPERIENCE AND RESULTS

The GC subject was historically carried out in the laboratorial practice, whose main competences are presented in Table 1, and the students must understand the fundamental elements of design in order to interpret the results, through teamwork. Figure 6 shows the working diagram of the Problem-Based Learning (PBL), where the didactic strategy used is important and the role of the students consisted of their participation in the process of evaluation and design of their knowledge. In summary: Step 1 - House design: the student presents the project of a single- family house; architectural plan, foundations and wooden structure; Step 2 - Construction company: the learner organizes and plans the functions of the company that will carry out the construction work of the “sketch”; Step 3 - Inspection: the student assistant monitors the work through weekly progress of the “model” and review of the work book (through the use of the portfolio) and Step 4 - Construction of the house model: at the end of the semester the student will deliver the model, by means of a photographic set and defense by Meet©.

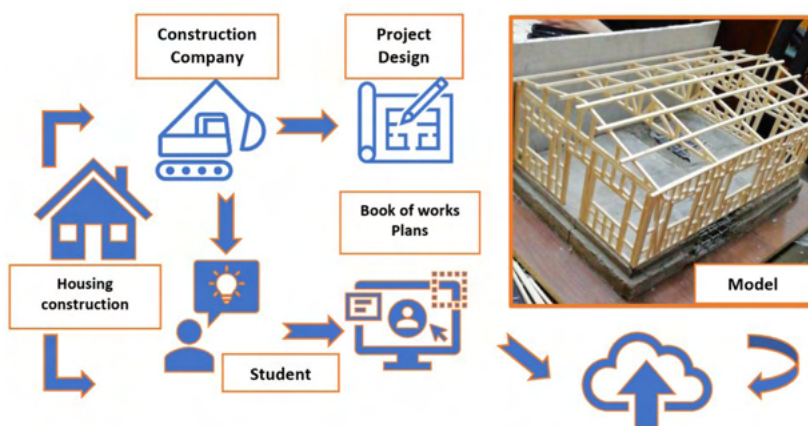


Figure 6. Wooden house construction work - flow.

It should be noted that in the practical classes, the students studied the construction systems every week and presented the progress of their models. In addition, they exchanged their experiences of the work they had done and solved their problems among

themselves. The contribution of all this is that it develops and shapes a self-taught culture in the students with respect to their learning, applying the capacity for organization, creativity and responsibility. In addition, it strengthens the links between the virtual classroom and the participative work between student - assistant - teacher. All this led to the development of oral expression and strengthening of character, meeting the project's scheduled times.

To produce the models for the SA-I subject, the students followed the following steps:

- i) Research of the topic, ii) Analysis and calculation of the results, iii) Choice of the materials to be used in the model and iv) Production of the model.

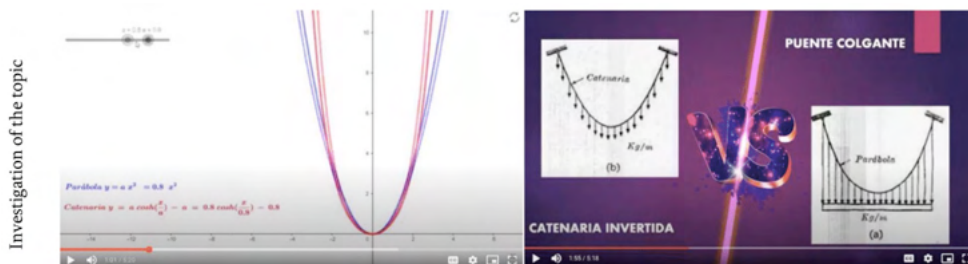


Figure 7. Theory of the catenary v / s parable.

According to the phases of DT, in the first phase the User - Student explains the concept of catenary and parabola, and in which type of structures they are used, i.e., empathises and defines the concepts to be used in order to create the project that solves the problem being viable and meaningful. (Villarroel et al., 2017) (see ¡Error! No se encuentra el origen de la referencia.).

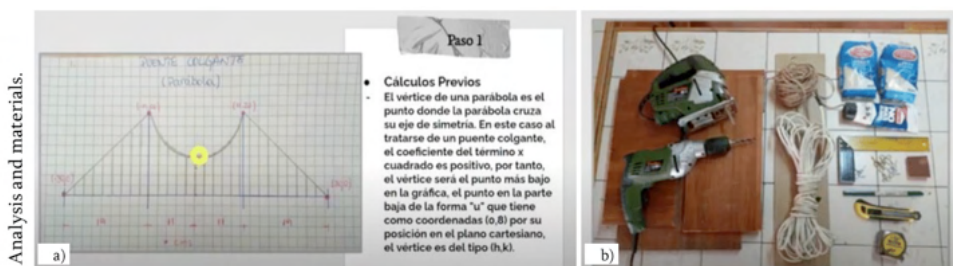


Figure 8. a) Calculation of a suspension bridge, by means of the parable and b) Materials for the elaboration of the model.

When carrying out the analysis and later the calculation (see ¡Error! No se encuentra el origen de la referencia.) the pupils executed their design firstly in sketches that served as a guide for the construction and/or elaboration of the model. In the Figure 8 ¡Error! No se encuentra el origen de la referencia.) the choice of materials for the model was free choice,

prioritizing the use of disused-recycled materials found in the home. In this phase, students developed the model used and tested the prototypes that met the requirement - testing the structure with 1 kg (Villarroel et al., 2017).

Each student built 2 models representing the concept catenary structure and suspension bridge, respectively. In phase 3 of the DT method, the solution is evaluated, in this case it is 100% technical by fulfilling the resistance with 1 kg (sugar and/or pulses) Figure 9.a)

At the end of the activity, all students presented their work to the course group, generating a forum discussion of the observations and results obtained individually. All of this was guided by the teacher responsible for the subject.

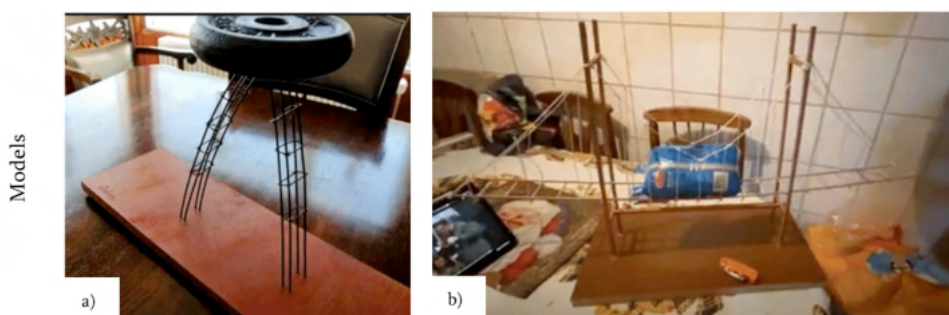


Figure 9.a) Arch created by using the catenary and b) Suspension bridge, using the parabole.

In summary, this research helped us determine the existence of gaps such as access to connectivity, digital skills (teacher-students), and skills in teaching methodologies. Added to this is the resilience of students and teachers to work with more time to comply with scheduled activities. Based on this, future classes will be hybrids, where classroom attendance in laboratories will prevail, and theoretical classes will have to work and adapt to learning experiences through technology.

4 | CONCLUSION

This research is summarized in two parts, the adaptation of the practical classes to virtual classes throughout the academic year 2020 and the perception of the students by means of a survey.

Regarding the practical virtual classes, the students highlight that they are a complement to the theory and an entertaining activity, reaching 80% satisfaction. Despite having in some cases, a variable speed internet connection, 27% of the students indicated that they “watched the videos later” and 53% that they “got to know the past subjects with their classmates”.

The perception of the academics is also important as they had to redesign the practical experiences and adapt them to reality. In addition, facing the lack of motivation of the students at the beginning of the pandemic and where distance learning, which is based on autonomy in their learning process, often did not happen. But despite that, the students managed to develop their organizational skills, creativity and responsibility in fulfilling the objectives set in the different activities. They also had to deal with another problem, access to the materials to make the models, since the local shops were closed due to their confinement (over 114 days), which meant that they had to use recycled materials found at home.

In relation to the teaching methodologies used in the GC/PBL and SA-I/DT subjects, both were implemented even though they were based on collaborative work and that the students worked most of the time from the solitude of their homes and met in the Virtual Room once a week. They managed to understand and relate the concepts. And they developed greater autonomy in their learning process.

Finally, this research focused on the transformation of the teaching-learning processes from practice to virtualization of the main problems detected by both students and academics, considering the emergency caused by the COVID- 19 pandemic experienced so far and the positive results of the process.

REFERENCES

- Barrows, H. S. (1986). A taxonomy of problem-based learning methods. *Medical education*, 20(6), 481-486.
- Campbell, L. O., Heller, S., & DeMara, R. F. (2019). Implementing Student-Created Video in Engineering: An Active Learning Approach for Exam Preparedness. *iJEP*, 9(4), 63-75.
- CChC. (2018). Déficit habitacional: Un desafío pendiente. *Cámara Chilena de la Construcción*, 18.
- COMAPA. (2017). Comapa Turismo [<https://comapa.com/parque-del-estrecho-de-magallanes>]. <https://comapa.com/parque-del-estrecho-de-magallanes>
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334. <https://doi.org/10.1007/BF02310555>
- Frias-Navarro, D. (2020). Apuntes de consistencia interna de las puntuaciones de un instrumento de medida. Universidad de Valencia. España. <https://www.uv.es/friasnav/AlfaCronbach.pdf>
- González, A. E., & del Valle López, Á. (2008). El aprendizaje basado en problemas: Una propuesta metodológica en educación superior (Vol. 18). Narcea Ediciones.
- Jackson, N., Quinn, D., Lonie, A., Rathore, P., & James, P. (2013). Video in engineering courses to promote active online learning environments. Proceedings of A2E2 conference Gold Coast. Retrieved from <https://www.engineersaustralia.org.au/australasian-association-engineering-education/2013-annualconference>.

Lagos, R., Calisto, N., Navarro, D., Maldonado, P., Alberti, P., Villarroel, J., Vivar, B., & Loyola, F. (2018). EFEI, an interdisciplinary cowork in the Engineering Faculty—University of Magallanes—Chile. *International Symposium on Project Approaches in Engineering Education*, 8.

Levine, D. I., Agogino, A. M., & Lesniewski, M. A. (2016). Design thinking in development engineering. *International Journal of Engineering Education*, 32(3), 1396-1406.

Llerena L., R., & Sánchez N., C. (2020). Educación rural en el Perú, entre la desigualdad y la pandemia: Desafíos para la educación virtual. *Presencia, miradas desde y hacia la educación*, 5.

Mabogunje, A., Sonalkar, N., & Leifer, L. (2016). Design thinking: A new foundational science for engineering. *International Journal of Engineering Education*, 32(3), 1540-1556.

MINVU. (2020, diciembre 22). MINVU anuncia inversión por 36 mil millones de pesos en viviendas sociales para Magallanes en 2021. [Www.ovejeronoticias.cl]. <https://www.ovejeronoticias.cl/2020/12/minvu-anuncia-inversion-por-36-mil-millones-de-pesos-en-viviendas-sociales-para-magallanes-en-2021/>

NU.CEPAL. (2020). La educación en tiempos de la pandemia de COVID-19 (p. 21). CEPAL UNESCO.

Steinbeck, R. (2011). El «design thinking» como estrategia de creatividad en la distancia. *Comunicar*, 19(37), 27-35.

SUBTEL. (2020, octubre 5). Conexiones de internet fija crecen 5,5% en Chile en junio 2020. Subsecretaría de Telecomunicaciones. <https://www.subtel.gob.cl/conexiones-de-internet-fija-crecen-55-en-chile-a-junio-de-2020/>

Tapia Saucedo, P. (2013). Uso del portafolio electrónico como herramienta para facilitar la labor académica de la Facultad de Ingeniería de Sistemas e Informática de la Universidad Nacional de San Martín-Tarapoto.

UMAG. (2014). DECRETO No10/SU/2014—Oficializa Nuevo Texto del Proyecto Educativo Institucional. Universidad de Magallanes, 25.

UMAG. (2020a). Decreto No012/SU/2020—Actualiza rediseño carrera Ingeniería en Construcción con salida intermedia de Técnico en Edificación, en la Universidad de Magallanes, como se indica. Universidad de Magallanes, 26.

UMAG. (2020b). Pregrado Virtual. Universidad de Magallanes. <https://pregradovirtual.umag.cl>

Villarroel, R., Spencer, H., & Muñoz, R. (2017). Aplicación de design thinking de manera interdisciplinaria en la asignatura de ingeniería de software. *Memorias XXX Congreso SOCHEDI*, 1-9.

ÍNDICE REMISSIVO

A

Abandono escolar 94, 95, 97, 98, 100

Aprendizagem 116, 123

Arte 9, 87, 106, 188, 190

C

Ciência 190

Ciências humanas 2, 6, 190

Comunicação 11, 190

Conflitos 122, 123, 124, 125, 128

Cultura 1, 2, 10, 51, 79, 106, 115, 123, 134, 137, 138, 141, 190

D

Direitos humanos 116

Docentes 25, 28, 30, 31, 34, 35, 36, 48, 49, 50, 53, 64, 65, 66, 76, 85, 86, 87, 88, 91, 94, 95, 96, 99, 117, 125, 145, 146, 147, 154, 156, 157, 158, 164, 166, 167, 168, 169, 171, 173, 180, 182, 183, 184, 185, 188

E

EAD 189

Educação 4, 74, 117, 118, 124, 125, 126, 129, 130, 131, 190

Ensino 123, 190

Espaço 1, 5, 122, 123

Exclusão 116

F

Família 116, 120, 121, 122, 123, 124, 128, 129, 130, 190

Formação 7, 8, 130

Futebol 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

G

Globalização 4, 11

H

Hábitos 26, 79, 87

História 1, 2, 4, 5, 6, 10, 11, 117, 118, 120, 124

I

Identidade 1, 3, 6, 7, 8, 9, 10, 11, 118, 190

Identidade regional 3, 7, 8, 10

Indivíduo 116, 117, 119, 120, 122, 123, 128

Interação 122, 124

Intercultural 88, 162

M

Memória 11, 190

Mídia 4, 9, 10

Mundo 2, 4, 5, 6, 9, 10, 11, 31, 39, 40, 42, 43, 45, 46, 51, 96, 99, 113, 116, 117, 118, 120, 121, 123, 124, 125, 127, 129, 132, 139, 161, 168

P

Paisagem 142, 143, 144

Paternidade 118

Percepção 124, 125, 130

Política 8, 11, 30, 31, 95, 146, 181

Prática 1, 2, 3, 4, 8, 123

Psicopedagogia 116

S

Síndromes 160, 161, 162, 163, 164, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181

Sociedade 2, 4, 8, 10, 118, 122, 190

T

Tecnologia 190

TIC 52, 68, 74, 96, 185, 189

Turismo 22, 132, 133, 134, 136, 137, 138, 139, 140, 141, 142, 143, 144

V

Valores 27, 52, 61, 63, 117, 122, 123, 136, 160, 181, 184

CIENCIAS HUMANAS:

POLÍTICA DE DIÁLOGO Y COLABORACIÓN

🌐 www.atenaeditora.com.br

✉️ contato@atenaeditora.com.br

📷 @atenaeditora

📘 www.facebook.com/atenaeditora.com.br

6



CIENCIAS HUMANAS:

POLÍTICA DE DIÁLOGO Y COLABORACIÓN

🌐 www.atenaeditora.com.br

✉️ contato@atenaeditora.com.br

📷 @atenaeditora

📘 www.facebook.com/atenaeditora.com.br

6

