UNIVERSITAT POLITÈCNICA DE VALÈNCIA

HEAd '23

9th International Conference on Higher Education Advances

June 19-22, 2023

Valencia, Spain

ADE Facultat d'Administració i Direcció d'Empreses /UPV

Departamento de Economía y Ciencias Sociales

SOWISO

Congress UPV
9th International Conference on Higher Education Advances (HEAd'23)

The contents of this publication have been evaluated by the Scientific Committee according to the procedure described in the preface. More information at http://www.headconf.org/

Scientific Editors

Josep Domenech
David Menéndez Álvarez-Hevia
Alicia Martínez-Varea
Rosa M. Llácer-Iglesias
Domenico Brunetto

Cover design by Gaia Leandri

Publisher

2023, Editorial Universitat Politècnica de València
Cno. de Vera, s/n.
46022 Valencia (SPAIN)
www.lalibreria.upv.es / Ref.: 6379_01_01_01

ISSN: 2603-5871
ISBN: 978-84-1396-085-2

Print on-demand

DOI: http://dx.doi.org/10.4995/HEAD23.2023.16871

9th International Conference on Higher Education Advances (HEAd'23)

This book is licensed under a Creative Commons Atribution-NonCommercial-ShareAlique-4.0 International license

Editorial Universitat Politècnica de València http://ocs.editorial.upv.es/index.php/HEAd/HEAd23

Index

Examining university student satisfaction and barriers to taking online remote exams 1
Maria Aristeidou, Simon Cross, Klaus-Dieter Rossade, Carlton Wood, Patrizia Paci

Measuring Student Development Using Points 9
Munir Mandviwalla, David Schuff, Laurel Miller, Manoj Chacko

University sustainability assessment and reporting: Preliminary findings from the Italian context 17
Marta Fundoni, Gianfranco Pischedda

Creating the "Examination Kiosk": Blended Assessment to Foster Self-Directed Learning in Higher Education 27
Anne Jantos, Claudia Albrecht, Sebastian Pannasch, Vincent Zipper

Pro-f-quiz: increasing the PROductivity of Feedback through activating QUIZzes 35
Kris Aerts, Wouter Groeneveld

Adverse effects of personalized automated feedback 45
Jan Riezebos, N. Renting, R. van Ooijen, A.J. van der Vaart

Authentic Assessment in Higher Education: A Collaborative Approach 51
Angela Siobhan Wright

Mind the Gap: Factors Which Inhibit Supporting Student Teachers to Engage in Action Research While on School Placement 59
Maria Moore, Dermot O'Donovan, Pauline Logue

Ability of Spanish preservice teachers to differentiate between creative and reproductive activities in the classroom 67
Eva Izquierdo Sanchis, Joan Josep Solaz Portolés, Antonio Martín Ezpeleta, Yolanda Echegoyen Sanz

Special Needs Pre-Service Teachers Digital Competencies: An Exploratory Study at the University of Foggia....75
Piergiorgio Guarini, Guendalina Peconio

Advancing Internationalization Agenda Amidst the War in Ukraine: Kindness and Trauma-Informed Teaching Project in Teacher Education....83
Svitlana Anatoliivna Kuzmina, Sue Fan Foo, Olha Vasylivna Matviienko, Tamara Volodymyrivna Glazunova

How University Teachers Can Support the Linking of Theory and Practice in Lesson Debriefings with Student Teachers....91
Christine Ladehoff, Jan Pfetsch, Diemut Ophardt

An Empirical Survey of Employment and MTI Competence in China....99
Xian Wang, Wenxiang Si, Linxin Ge, Qiuhan Wang

Intercultural interaction modulating implicit attitudes towards disability and cultural competence in higher education....107
Ludmila Tokarskaya Valerievna, Zijun Li

Developing Supply Chain Competencies Through Experiential Learning and Games....113
Sandra Maycotte-Felkel, Heriberto Garcia-Reyes, Elena Isabel Victoria Quijano-Dominguez

Students' experience of Double Degree programmes: motivations and perceptions of skill acquisition....121
Elena Borsetto, Chiara Saccon

A Suggested Program for Developing First Year University Students' Agency....129
Nevine Mahmoud Fayek El Souefi

Information skills instruction in Higher Education students using the 4C/ID model....137
Consuelo Garcia, Esther Argelagos, Jesús Privado

A Systematic Review: Foundations for Online Course Design in Higher Education....145
Jacelyn Smallwood Ramos

E-learning and economics: Knowledge dissemination through social networks....153
Roberto Ivan Fuentes Contreras, Moises Librado Gonzalez, Yadira Zulith Flores Anaya

The digital platform for the Unite! Alliance: the metacampus....161
Jesus Alcober, Farnaz Haji Mohammadali

Nurturing the human connection: Increasing student engagement and personal connection in an asynchronous language course 171
Scott Despain, Jennifer A Despain

Critical analysis of the potential of social robotics in higher education for the management of illness and bereavement 179
Laia Riera, Francisco José Perales, Francisca Negre

Enhacing Personalization and Experiential Learning in Higher Education through the VR Mobile Application, I'm IN - HKUST 185
Kasina Wong

Student Response Systems: Enabler of active learning in a large class 195
Willie Golden

A Mixed Reality Laboratory for Developing Competencies in Control Engineering 203
Manuel Navarro-Gutiérrez, Carlos Renato Vázquez, Alejandro Guajardo-Cuellar, Noe Marcelo Yungaicela-Naula

How Students Manage Peer Feedback Through a Collaborative Activity in a CS1 Course 211
Géraldine Brieven, Laurent Leduc, Benoit Donnet

Facilitating international transdisciplinary collaboration in a virtual academic exchange project 221
Martin Leibinger, Alexandra Regan Toland

Introducing a collaborative learning strategy in a hybrid and traditional laboratory for undergraduate computer science students 229
Sam Ivan O'Neill, Aidan Mooney

School, University and Community Collaboration for Inclusivity: the Turin Experience with the University Courses "Expert in the Processes of Inclusive Education" and "Expert in Educational and Didactic Processes" 237
Alessandro Monchietto, Paolo Bianchini, Cecilia Marchisio

Experiential learning using short-term global virtual team projects 245
Stephanie Swartz

Adopting Learning Circle approaches to equip academic staff for Community Engaged Research and Learning practices 255
Réka Matolay, Linde Moriau, Emma McKenna, Andrea Toarniczky, Judit Gáspár, Márta Frigyik, Brecht Van der Schueren, Sinead McCann, Caroline McGowan, Catherine Bates

Interdisciplinary Week in Game Design: A Learning Experience 263
Inês Barbedo, Bárbara Barroso

"Strategy just isn't like that". A case study on the use of a coopetitive game to experience the strategy roller coaster. 273
Jon Fanning

Combining computer-based training, virtual, or augmented reality with peer teaching in medical and biotechnological education 279
Christian Hanshans, Moritz Mourice Rick Faust

They want to fly! – International students attitudes concerning the climate crisis and their air travel behavior. 287
Dimitri Prandner

A Project-Based Learning Approach For Engaging Undergraduate Students In UN SDGs Using GIS 295
Moustafa Ahmed Baraka

Take the Challenge: Compute the CO2e emissions of your Programming Course 303
Maria Serna, Joaquim Gabarro, Maria Josep Blesa, Amalia Duch

Investigating Learners Perceptions of Completion and Certification in MOOCs 311
Meghan Perdue

An Augmentation Framework for Efficiently Extracting Open Educational Resources from Slideshows 321
Balthasar Teuscher, Zhouyi Xiong, Martin Werner

ChatGPT in Higher Education: The Good, The Bad, and The University 331
Marius Schönberger

ChatGPT in the Classroom: Friend or Foe? 339
Josep Domenech

"Building" knowledge by creating manipulatives with the 3D printer: A course for mathematics student teachers 349
Tim Läufer, Matthias Ludwig

The complexity of grading student work and the reconstruction of the meaning of criterion-referenced assessment 357
Liao Liang

Reggio Childhood Studies PhD as a learning community 367
Marcella Colacino, Roberta Mineo

Financial literacy decision tree game: A system development exposé.....377
Melany Lotter, Chioma Okoro

Fairness matters in higher education: Student classroom justice perceptions and behavioral responses 385
Rebecca M. Chory

University graduates enrolled in Higher VET in Spain: An upskilling or reskilling choice? 393
Iván Diego Rodríguez, Juan P. Gamboa

Quality Management in Italian Universities: A Case Study in the University of Cassino and Southern Lazio 401
Ilenia Colamatteo, Ilenia Bravo, Lucio Cappelli, Patrizia Papetti

Robust estimation method for the economic subsidies to educational institutions in Chile 411
Valentina Ugalde, Sebastián Dávila-Gálvez, Óscar Vásquez

Evolution of academic dishonesty in computer science courses 421
Katerina Zdravkova

Place-based Teaching amidst a Global Pandemic? 429
Barbara Cabezal Bruno, Daniela Bottjer-Wilson, Jennifer Engels

Surviving and Thriving in COVID.....437
Mary Jo Parker

A Post-Covid comparison of students' usage of an online learning platform 447
Robert A. Phillips

Digital multitasking during academic lectures: Did the Covid-19 lockdown change the students' behavior?.....455
Rebeca Macedo Mendes, Ana Isabel Veloso

The role of financial aid in college performance: The importance of class attendance, aid amount and type of aid 465
Isabel de Sivatte, Patricia Gabaldón

Changing Higher Education Governance in Latin America: The Cases of Chile and Ecuador 475
Mario Alarcón, José Joaquín Brunner

Resource orchestration and the higher education programme director 483
Hans Frederik

Non-formal Faculty Development. Conceptual considerations and implementation in practice 491
Birgit Hawelka, Regine Bachmaier

Teaching olfaction at the time of the 'sensual turn'. The case of Pierre Bénard 499
Sandra Cadiou

Internal quality assurance systems in Namibian higher education: Stakeholder perceptions and guidelines for enhancing the system 507
Marien Alet Graham, Toini Tuyeimo Ndapewoshali Angolo, Celeste Combrinck

Lecturer language: EMI students' experiences on first- and second-cycle degrees 517
Jane Helen Johnson, Mariangela Picciuolo

Learning Analytics Dashboard to Support Instructors: A Literature Review 525
Dhatri Padakanti, Marcia Moraes

Which career should I choose?. Aplication of a pre-university vocational guidance platform based on the Ikigai methodology 533
Marta Retamosa, Ángel Millán, Jorge García-Unanue

Quest-based Gamification In A Software Development Lab Course: A Case Study 541
Nuno H. Flores, Rui Pinto

Retail Design Education. Designing New and Reframed Learning Tools for Experience-based Learning 549
Mariagiovanna Di Iorio, Alessandra Spagnoli

Analysis of the feasibility of investment projects in real assets with PBL: A very real experience 559
Isabel Abinzano, Harold Bonilla, Pilar Corredor, Cristina Del Río, Elena Ferrer, Ana González, José Manuel Mansilla, Beatriz Martínez, Luis Muga

A Framework for Developing Mathematical Tasks for Automatic Formative Assessment in Higher Education 567
Andreas Körner, Clara Horvath, Lana Medo

Insights from a transgender student in the EFL classroom: from individual perspective to institutional change 577
Sergio Peñalver-Férez

English for Engineering: Intercultural formal letter writing 587
Begoña Bellés-Fortuño, Adrián Pla-Ángel

The explicit teaching of vocabulary in French L2: theoretical models, teaching practices and experimental itineraries 595
Silvia Domenica Zollo

Mathematics in Economic and Business Science: how to reach the top without a pathway 605
Yeray Rodríguez, Ana Munarriz, Maria Isabel Goicoechea, Maria Jesus Campion

The role of education in fostering entrepreneurial intentions among business students 615
Laila Cekule, Andrejs Cekuls, Margarita Dunska

The learning motives of business students and postponement 623
Merle Küttim, Tarvo Niine, Jelena Hartšenko, Anna Kornijenko, Juhan Loorits

Online Repository for Facilitating Teaching and Learning of Undergraduate Statistical Modeling Tools 631
Qing Wang, Xizhen Cai

The MILAGE LEARN+ app on Higher Education 639
Mauro Figueiredo, Custódia Fonseca, Paula Ventura, Marielba Zacarias, José Inácio Rodrigues

Leveraging AI to Instruct Architecture Students on Circular Design Techniques and Life Cycle Assessment 647
Toktam B.Tabrizi, Ozgur Gocer, Arash Sadrieh, Anastasia Globa

When a test-taking strategy is better? An approach from the paradigm of scheduling under explorable uncertainty. 657
Cristóbal Alfredo Mauricio, Sebastian Davila-Gálvez, Óscar Carlos Vasquez

Microcredentials: an opportunity towards the digital transformation 665
Fernando J. P. Caetano, Diogo G. Casanova, Darlinda M. P. Moreira

Fostering Cooperation Between Lecturers and TLC Staff to Improve Digital Teaching. Experiences with a Pool of Discipline-specific Experts 675
Petra Panenka, Ann-Christine Hadam, Hans-Martin Pohl

(Digitally) transforming education in a large university 683
Iris Peeters, Sylvia Grommen, Hans Tubbax

Enhancing Online Teaching: Addressing the Challenges Faced by Early-Career Academics at Vietnam National University, Hanoi 691
Le Thi Thuong, Nghiem Xuan Huy, Tran Thi Hoai, Nguyen Thai Ba, Tuan Thu Trang

Steps towards Enabling Health Professionals through Future Skills....701
Yvonne Sedelmaier, Dieter Landes

"Map ourselves through Digital Storytelling": Pedagogical tool in the development of self-knowledge skills on Advanced practice psychiatric-mental health nursing....709
Carlos Laranjeira, João Gomes, Paula Carvalho, Ana Querido

Competency-based education advances in Higher Education in Health 717
Pau Martinez-bueso, Olga Velasco-Roldán, Iosune Salinas-Bueno, Inmaculada Riquelme-Agulló, Elisa Bosch-Donate

Myth-busters at work: Development of engineering identity and employability through student research....723
Jeroen Lievens

Development and piloting of a micro-credential programme in research ethics and integrity leadership – an example from Estonia 733
Anu Tammeleht, Kertu Rajando, Margit Sutrop

Higher education student work placement and employability 741
Badroonesha Aumjaud, Brinda Ramasawmy, Brigitte Marie Francoise Driver, Deena Ramful-Baboolall

When Intercultural Education is Problematic: The Case of Russian as a Foreign Language....749
Linda Torresin

Digital Pedagogy for the Present: An Artificial Intelligence Methodology for Curriculum Development....757
Michelle Anne Rufrano, Jean-Ezra Yeung

New Model to Evaluate Values, Beliefs and Assumptions in the Recognition of Prior Learning 765
Phil O'Leary

Academic rankings as a source of metrics and benchmark tools for continuous improvement at Técnico Lisboa....773
Carlos Carvalho Carvalho, João Fernandes

Undergraduates as researchers in Humanities and Social Sciences courses: Articulating assessment by means of micro and macro cooperative and integrated tasks....783
Mireia Trenchs-Parera, Andreana Pastena

Threshold Tests as a way to encourage long-term, self-regulated learners in Engineering 793
Danica Solina, Chris Wong, Kate Crawford, Elaine Huber

The PASSt Project: Predictive Analytics and Simulation of Studies aimed at Quality Management and Curriculum Planning 801
Gabriel Wurzer, Shabnam Tauböck, Markus Reismann, Christian Marschnigg, Sukrit Sharma, Karl Ledermüller, Julia Spörk, Maria Krakovsky

An innovative, technology-enhanced instructional approach to address the diverse competencies of STEM students in math classes 809
Andreas Körner, Corinna Modiz

Development of scientific skills in Higher Education with a flipped classroom-contest approach 817
Miguel Garcia-Bosque, Carlos Sánchez-Azqueta, Concepción Aldea, Esther Cascarosa, Santiago Celma

The essentials of science communication in a course engaging both for students and professionals 825
Maurizio Dabbicco, Franco Liuzzi, Sandra Lucente, Massimo Trotta

Teachers of Natural Sciences: some challenges and perspectives in Brazil 835
Cristina Leite

Designing co-curriculum experiential learning practice in permaculture for studying science classics 843
Ming Li

Relationship between time management and class attendance in university students: clustering techniques for detection of profiles 851
Santiago Porras Alfonso, Julio César Puche Regaliza, Athénaïs Marianne Sauvée, Paula Antón Maraña, Silvia Casado Yusta, Joaquín Antonio Pacheco Bonrostro

The engagement in university students: Preliminary psychometric analyses of the Spanish version of the Engagement vs. Disaffection with Learning Scale. 861
Alba Aza, Georgina Guilera, Chuen Ann Chai, Juana Gómez-Benito, Estefania Guerrero, Maite Barrios

Increasing student engagement with COIL Padlet 871
Barbara Therese Miller, Susan Göldi, Meng Hsien (Jenny) Lin

Positive effects of mindfulness practices on academic performance and well-being 879
Katia G. Karadjova-Kozhuharova, Ruth L. Baker

Peer coaching in a leadership development program: The role of developmental relationships 887
Laura Cortellazzo, Sara Bonesso, Fabrizio Gerli, Chaima Lazreg

The current HE classroom: Promoting new types of learning, executive function processes and strategies to foster students' motivation and academic success. 895
Genny Villa

The value of the teaching quality innovation projects in the universities. The case of Quid Sapienza 909
Barbara Mazza, Elena Valentini, Cristina Sofia

The search for values as a didactic tool - An interdisciplinary perspective..... 919
Andrea Fenice, Renzo Mocini

Design and manufacturing of a LIGHTBOARD - Combining the peer-to-peer idea with project based teaching 929
Anja Pfennig

The impact of technology adoption in teaching and learning within ODeL 937
Thandiwe Bongani Radebe, Ronny Tebeta, Rendani Wilson Maladzhi

Moodle-based e-learning courses for introduction to critical thinking in a multidisciplinary perspective 947
Jean-François Bodart, Anne-Frédérique Paul-Antoine, Aline Stevenoot, Corinne Vézirian

Tailoring professional development to postgraduate students: It's not the chicken, it's the egg..... 957
Marianne Elisabeth Savory

Academic dishonesty, essay mills, and Artificial Intelligence: rethinking assessment strategies..... 965
Simon Sweeney

Thinking outside the box - Virtual, intercultural labs in engineering education 973
Julia Salzinger, Ika Kurniawati, Lars Abrahamczyk, Rüdiger Höffer

Students experience of blended teaching formats in pre-calculus courses..... 981
Domenico Brunetto, Giulia Bernardi, Caterina Bassi

Should we be afraid of open book exams? Our experience..... 989
Antoni Alegre-Martínez, María Isabel Martínez-Martínez, José Luis Alfonso-Sanchez

Experiencing Third Spaces in between University and Society: Transdisciplinary Learning Experiences in a Shopping Center 997
Thorsten Philipp, Katarina Marej

Adaptation of the Interprofessional Collaborative Competency Attainment Scale for Usage Across Professions 1005
Simon Schmitt, Monja Pohley, Aldin Strikovic, Eveline Wittmann

Story/No Story: a narrative design exercise for shared ways of seeing..... 1013
John Stevens

Collaborative knowledge construction during computational lab activities in Financial Mathematics 1021
Adamaria Perrotta, Alice Barana, Marina Marchisio, Matteo Sacchet

Learning agroecology through the serious game SEGAE in an online lesson: unveiling its impact on knowledge articulation..... 1029
Mireille De Graeuwe, Lavena Van Cranenbroeck, Rémy Parent, Clément Serdobbel, Yves Brostaux, Kevin Maréchal

Managing European interuniversity collaboration: A bottom-up approach to identify digital education challenges from below..... 1039
German Varas, Alvaro Pina Stranger, Gaelle Mobuchon

Deep Learning: a Study on Marine Renewable Energy and Sustainability Education in an Irish Context..... 1047
Pauline Anne Logue, Roisin Nash, Michael Walsh, Michael Faney, Dearcán Ó Donnghaile

Plant and plan, care and grow. A hands-on exercice using the (inner) sustainable development goals to teach research methodology to final year sociology students 1055
Rosalina Pisco Costa

Community intervention model: social entrepreneurship education as a strategy for a sustainable development 1063
Yadira Zulith Flores Anaya, Martín Arturo Ramírez Urquidy, Roberto Iván Fuentes Contreras

Exploring second language viewers' use of cognitive strategies in learning Chinese through multimedia learning resources with captions and social annotations..... 1071
Shuzhou Lin, Ting Wang, Wei Wei, Jiahui Yang, Sara Cañizal Sardón

Diversity in (word) meaning: Reducing the risk of bias in foreign language vocabulary teaching using prototype theory..... 1081
Anna Malena Pichler

Enhancing Language Self-Efficacy of EFL University Students through Experiential Learning: A Study of the Learning League Project....1089
Fiona Sze Han Ho, Nick Wong, Angie Wing Chi Li, Lo Lau

Data-Driven Project-Based Learning in Specialized Translation Classes – The Case of Comparable Corpora....1097
Katrin Herget, Teresa Alegre

Cultural heritage and its dissemination through linguistic and technical learning in Higher Education....1105
Daniela Gil-Salom, Eliseo Marzal-Calatayud, Damián López-Rodríguez

Institutional influencers and support for tutoring in a South African higher education institution....1113
Chioma Sylvia Okoro, Nelson Bakali Phiri

Globalisation vs diversity in national languages in HE context: Case of Estonia....1123
Peep Nemvalts, Triin Roosalu, Eve-Liis Roosmaa, Helena Lemendik

Bottom-up Curriculum Innovation through Grants for Lecturers....1131
Miriam Ossevoort, Robert Inklaar, Jan Riezebos

Designing a Metaverse for an Immersive Learning Experience....1139
Mark Frydenberg, Shivam Ohri

Technology-enhanced learning: Cloud Computing to implement cooperation among schools....1147
Ilaria Veronesi, Paolo Musmarra, Francesco Saverio Tortoriello

Inverting the classroom using on-demand lightboard micro lecture films (learning glass)....1155
Anja Pfennig

Let's Experience Learning in the Metaverse....1163
Eman AbuKhousa

Innovation in Education by Design Thinking....1171
Iris Schmidberger, Sven Wippermann

Combining integrated curriculum and project-based learning: A short film case study from media and communication students....1179
Hibai Lopez-Gonzalez, Maria-Jose Masanet, Maddalena Fedele, Sandra Rius, Jaume E. Vilaseca, Lydia Sánchez, Sergio Villanueva Baselga, Adrien Faure-Carvallo, Anna Marquès, Jorge Franganillo, María Ángeles García Asensio

Teamwork and student engagement during practical sessions in laboratories 1187
Chalak Omar, Sarah Plumb

The Impact of Practical Training on Student Understanding of Plagiarism 1197
Mairéad Hogan

Evolution of a Continuous Assessment and Feedback Concept in a Computer Science 101 Course 1207
Dieter Pawelczak, Antje Neve

Black Student Achievement Plan Evaluation and Assessment 1215
TrVel Lyons, Mabel Hernandez, Sy Doan, Shafiqa Ahmadi, Darnell Cole

Reflective Practice ePortfolios: A digital teaching tool to enhance third year BA Culinary and Gastronomic Science students' professional learning experiences 1225
Clare Gilsenan, Marie English

Job Demands and Resources in the Work of University Teachers in Central and Eastern Europe 1233
Klára Kovács, Beáta Dobay, Szabolcs Halasi, Tamás Pinczés

From training practice in the professional world to university: characterization of Vocational Training students to retain them in university studies 1241
Ana Munarriz, Yeray Rodriguez, Maria Isabel Goicoechea, Maria Jesus Campion

An Examination of Significant Factors Influencing College Student Employment Cognition 1251
Yinggui Qiu, Qiaoguan Ye, Ningjie Wu, Sandy Chen, Hongjie Zhang, Xuan Zhang

Holey Moley Guacamole! Understanding Foreign Currency Exposure 1261
Valeria Martinez

Creating a Bridge to Post-Traditional Male Student Success at a Community College ... 1271
Theresa Marie Dereme

EPIC in Action, Measuring Entrepreneurial Competencies in Higher Education 1279
Connie O'Regan, Neil Ferguson, Michelle Millar, Jenny Mullery, Natalie Walsh, Tony Hall

The MEM project: 5 years of experiences, challenges, and outcomes of an international double master-level degree 1287
Roberto Montanari, Abdel-Malek Layek, Gino Ferretti, Alessandro Bernazzoli, Eleonora Bottani, Andrea Volpi, Federico Solari, Letizia Tebaldi, Giorgia Casella, Natalya Lysova, Michele Bocelli, Claudio Suppini, Lucia Orlandini, Monia Bertoli, Andrea Pintus

Multiple-Value Governance in (German) Higher Education: a New Paradigm? 1297
Bernd Kleimann

Development of the "Complex Project" course in the Transport engineering education 1305
Gábor Horváth

Digital identity and body identity: the mutation of the university environment in pandemic times..... 1313
Lucia Pallonetto, Rosanna Perrone, Carmen Palumbo

Reflective practice to bridge the theory-gap practice in Human-Computer interaction classes..... 1321
Moretlo Tlale-Mkhize, Janet Liebenberg

The use of TAM in evaluating the effectiveness of network simulation tools in Internet Technologies subject..... 1331
Dina Moloja

Symbiosis between Learning Analytics and digital transformation 1341
Hans Tubbax, Iris Peeters

Six colours for inclusion: results of an explorative activity in a simplexity approach 1349
Alessio Di Paolo, Iolanda Zollo, Michele Domenico Todino, Maurizio Sibilio

Cybersecurity education in European higher education institutions 1357
Mirva Salminen, Niko Candelin, Kaisa Cullen, Sari Latvanen, Marianne Lindroth, Teemu Matilainen

The impact of digital platforms enhancement on global virtual teams' engagement across selected business schools 1365
Emil Velinov, Juergen Bleicher, Vincent Montenero

Evaluating the Impact of Strategies on Students' Perceptions of Digital Transformation – A Case Study of a Swedish Higher Education Institution 1375
Henning Brink, Ellen Mårtensson, Carina Ström Hylén, Sven Packmohr

My First Six Months: Industrial Design Students Perceptions of their First Semester Experience of Learner-Centred Design Studios 1383
William Dim, Helen McLean, Soumitri Varadarajan, Caroline Francis

Student perceptions of a remotely operated motor-driven generator in engineering education 1391
Nicolaas Johannes Luwes, Leanri van Heerden, Walter Commerell

Ideas on Digitally Supported Individualization of Teaching and Learning for Evolving Competency Requirements 1399
Thomas Fuhrmann, Michael Niemetz

Using Technology Innovation and Blended Delivery for Student-centred Learning in Large Undergraduate Classes 1407
Dominik Holzer, Alberto Pugnale

Postgraduate degree program in Social Business as a new knowledge tool in entrepreneurship and social impact 1417
Karina Isabel Salinas Solis, Natanael Ramírez Angulo, German Osorio Novela

Embeddedness of students with special educational needs in higher education 1425
Anett Hrabéczy, Gabriella Pusztai

Black Digital Humanities in Interdisciplinary Undergraduate Teaching on Diversity, Gender, and Sexuality 1433
Magdalena J Zaborowska, Juan J Rodríguez Barrera

Audiovisual and Accessible Translation from a Transdisciplinary Insight: Curriculum Design and Professional Practice for Intercultural Communication 1441
Mercedes Enríquez-Aranda

Setting Learners up for Success: A Universal Design for Learning Approach to Industry Placement Assessment 1451
Kate Dunne, James Corbett

The UNIVAC project: Implementing the user journey approach in accessibility research at university 1459
Blanca Arias-Badia, Irene Hermosa-Ramírez, Mar Ogea, Mireia Oliver, Daniel Segura, Ana Tamayo, Sergi Torner

About change: How institutionally aligning online pedagogy, design and technology impacts higher education teachers 1467
Paula Charbonneau-Gowdy, Caro Galdames

Psychometric Properties of the Spanish-Language Version of the Agentic Engagement Scale (AES): A Preliminary Study 1477
Estefania Guerrero, Maite Barrios, Chuen Ann Chai, Juana Gómez-Benito, Alba Aza, Georgina Guilera

9th International Conference on Higher Education Advances (HEAd'23)
Universitat Politècnica de València, València, 2023
DOI: http://dx.doi.org/10.4995/HEAd23.2023.16210

English for engineering: intercultural formal letter writing

Adrián Pla-Ángel, Begoña Bellés-Fortuño
English Studies Department, Universitat Jaume I/ IULMA, Spain.

Abstract

Writing is a productive skill highly addressed in the ESP classroom. Students learning a foreign language have to learn how to create accurate structured texts with organised ideas to convey relevant meaning. The aim of this study is to analyse and categorize written mistakes produced by 1st cycle foreign students from different nationalities (i.e.: Romanian, Moroccan and Bulgarian) in the English for Engineering module at a Spanish university. The objective is to examine written language accuracy in formal letter writing such as enquiring and complaint letters, to detect any intercultural interference as to mother-tongue influence and other language varieties in the learning of curricular and linguistic knowledge. We believe that studies such as the one presented here allow teachers to provide students with written corrective feedback which may have a positive impact on students' writing skills (Li, 2000), in this case, foreign students enrolled in an ESP module at a Spanish university.

Keywords: *Formal writing; ESP; written corrective feedback, intercultural interference.*

This work is licensed under a Creative Commons License CC BY-NC-SA 4.0
Editorial Universitat Politècnica de València

1. Introduction

Writing is a productive skill highly addressed in the ESP classroom. Students learning a foreign language have to learn how to create accurate structured texts with organised ideas to convey relevant meaning. Written production is a preferred and demanded task in class to assess language learning progress since it is one of the most widespread forms to record students' performances (Whittaker et al. 2011). Other language elements that are of interest in the ESP classroom have to do with language accuracy, creativity, and corrective feedback. Some studies have analysed written corrective feedback from British spelling samples to be able to describe the lexico-grammatical errors committed by students for the assessment of their written outcomes (Bellés-Calvera & Bellés-Fortuño, 2018; Zhang, 2011). Error analysis and later correction is fundamental for the systematic study of the learner's language (Corder, 1981), benefiting all participants in the learning process, that is, teachers, students and researchers.

The aim of this study is to analyse and categorize written mistakes produced by 1st cycle foreign students from different nationalities (i.e.: Romanian, Moroccan and Bulgarian) in the English for Engineering module at a Spanish university. The objective is to examine written language accuracy in formal letter writing such as enquiring and complaint letters, to detect any intercultural interference as to mother-tongue influence and other language varieties in the learning of curricular and linguistic knowledge.

In this pilot study, an initial number of ten texts have been analysed and corrected to provide a classification of errors committed by foreign students attending the English for Engineering module at a Spanish university. Spell-checker software and Grammarly (2009) have been used to spot mistakes. Errors such as: "I would be fine with removing shipping coste", "and for this se need tour" "un cash" "this are my informations", "will safe you money", "we would spend knowing what your options are to make the payment" or "standarts" have been detected among a range of different error typologies. Some of the errors encountered may have been originated by intercultural language interference, considering the foreign students mother tongue is other than Spanish or English. Wrong order choice, grammatical correlations or lexical errors are the most recurrent ones. The classification of errors generated in this study and committed by intercultural students is later compared with the typology of common errors produced by Spanish learners of English as a foreign language with the aim of generating a number of written corrective feedback strategies, namely direct feedback, indirect feedback, or reformulation among others (Ellis, 2009).

2. Methodology

To carry out this study we have gathered a selection of 10 texts corresponding to 67 writing assignments of formal letters. The formal letter writing is a task the students participating in

the study need to accomplish in the practical section of the subject (1st year Mechanical Engineering Degree). Specifically, the selected writing assignments consisted of an evaluated compulsory task included in the curriculum of the subject "English for Engineering". The formal letters had to follow the structure and topic of 'inquiry letter' and 'letter of complaint'. The instructions and standardization of 'inquiry' and 'complaint' formal letters are explained in the subject. Students have to hand in the letters as part of the final subject evaluation.

2.1. Participants

The participants taking place in this study are 1st year Mechanical Engineering students enrolled in their ESP English for engineering module at a Spanish university. A total number of 67 undergraduate students writing assignments were gathered, 62 of them were male and 5 female. As for their nationalities, their origin countries varied: Spain, Romanian, Moroccan and Bulgarian, being Spanish the majority of them (see Table 1).

Table 1. Participants.

Participants		
	Gender	Nationality
	62 male	60 Spanish
	5 female	5 Moroccan
		1 Bulgarian
		1 Romania
TOTAL	67	67

The identity of students has been protected and the writings analysed in this study have been anonymised for a more objective analysis.

2.2. Materials and tools

The corpus of ten formal letters used in this study was analysed in search of different basic errors. To do so a previous error classification model was considered (Bellés-Calvera & Bellés-Fortuño, 2018). Aside from that, a spell-checker software and Grammarly (2009) have been also used to detect those errors. This classification model included errors such as: Lexical, grammatical or spelling errors as well as wrong order choice. As to grammatical errors Bellés-Calvera and Bellés-Fortuño include "verb tense, subject-verb agreement, fragments, word order and punctuation" (2018:110). Regarding lexical errors, these include: "articles, nouns, pronouns, verbs, adjectives, prepositions, word choice and spelling" (Bellés-Calvera & Bellés-Fortuño, 2018: 110).

Table 2. Errors classification model (Bellés-Calvera & Bellés-Fortuño, 2018).

Grammatical errors	Lexical error
Subject-verb agreement	*Spelling*
Punctuation	*Capitalisation*
Fragment	*Prepositions*
Verb tense	*Word choice*
Word order	*Adverbs*
	Pronouns
	Articles
	Verbs
	Nouns

This previous classification (Table 2) was initially used to analyse the corpus of this study in order to detect and classify the students' errors found. However, a closer look at the writings revealed that some of the categories included in the classification model were not found in the corpus. The relevant results are presented in the following section.

3. Results and conclusions

In this section, the results from students' writing performance on the formal letter task are analysed and discussed. Therefore, a classification of students' grammatical and lexical errors has been generated, based on the classification from the study carried out by Bellés-Calvera & Bellés-Fortuño (2018). The errors have been analysed according to their frequency of occurrence and the percentage over the total number of grammatical or lexical errors and lastly, in Table 3 below, some examples from each type of error have also been provided.

The analysis of 10 samples of formal letters led us to the identification of students' most commonly committed errors. A difference in the use of grammar and lexis can be observed amid the Mechanical Engineering students. Grammatical errors embraced verb tense, subject-verb agreement, fragments, word order and punctuation, while lexical errors included articles, nouns, pronouns, verbs, adjectives, prepositions, word choice and spelling.

From the results it can be observed that the greatest difficulties for the participants lie on punctuation, fragment, spelling, word choice and verbs. Fragment errors are understood as unfinished utterances as well as with grammatically and lexically incorrect utterances as a

whole. Nonetheless, it should be stressed that both grammatical and lexical categories show similar tendencies in the sense that students commit nearly the same percentage of errors.

Table 3 below shows the most common grammatical errors committed by the participants of this study. Surprisingly, the most frequently-made error types correspond to punctuation (30,5%) followed by fragments (10%). On the other hand, the number of errors is considerably lower when it comes to word order (4,3%), and subject-verb agreement (2%).

Table 3. Grammatical errors: Frequency, percentage and examples.

Grammatical errors	Frequency	Percentage	Examples
Subject-verb agreement	2	8,7%	"...and this are my information"
Punctuation	7	30,5 %	"I look forward to hearing from you soon! Yours sincerely
Fragment	10	43,5%	"After five years of close I need a good discount"
Verb tense	5	13,04%	"We would like to knowing"
Wrong word	2	8,7	"We would spend knowing what your options are to make make the payment"
Total	23		

Focusing on lexical errors, it can be noticed that the most prominent error is that of spelling (32,7%). Another category to be highlighted is the failure of students to select verbs (16,3%) and the choice of words (14,3%). In the same line, prepositions (10,2%) are often substituted by other prepositions or adverbs.

Some of the errors encountered have been originated by intercultural language interference, since for some of the participants Spanish is not their mother tongue. Henceforth, most grammatical and lexical errors -which are the two major errors typologies-, may have a connection with the intercultural language interference. Lexical (spelling with a 32,7%), grammatical correlations (punctuation with a 30,5%) followed by fragments (10%) are the most recurrent ones. The classification of errors generated in this study and committed by

intercultural students is later compared with the typology of common errors produced by Spanish learners of English as a foreign language with the aim of generating a number of written corrective feedback strategies, namely direct feedback, indirect feedback, or reformulation among others (Ellis 2009).

Table 4. Lexical errors: Frequency, percentage and examples.

Lexical error	Frequency	Percentage	Examples
Spelling	16	32,7 %	"The consigment of plugs was succesfully sent to you adress".
Capitalisation	5	10,2%	"Thank you for you letter of 12 november.."
Prepositions	5	10,2%	"payment of delivery"
			"payment un cash"
Word choice	7	14,3%	"If you want we can send you one show, you can test it"
			"that will safe you money"
			"On all prime order"
Adverbs	4	8,2%	"Also the procomo400 has raised our standarts…"
Pronouns	3	6,12%	"We write you regarding the consigment for their company"
			"We would spend knowing what your options are…"
Verbs	8	16,3%	"What kind of discount could you give me for stays and keep you in mind for next purchases".
Nouns	1	2,04%	"the possibility of upgradation"
Articles	1	2,04%	"I need a available good discount"
Total	49		

Up until this point, one can construe that first year university students, and in this specific case, Mechanical Engineering students in their English module, have not been trained on the proper use of punctuation symbols in previous years at high school. English and other foreign language codes have many differences in the way punctuation symbols are used, that is to say, the usage of commas and semi-colon or colon in combination with cohesive markers. For this reason, more specific training on punctuation symbols may be convenient for first year university students. Furthermore, the participants of this study have also displayed errors in spelling and wrong verb choice, hence, more training on these aspects should then be implemented in the classroom syllabuses.

We believe that studies such as the one presented here allow teachers to provide students with written corrective feedback which may have a positive impact on students' writing skills (Li, 2000). In this case, foreign students enrolled in an ESP module at a Spanish university. Thus, detecting and indexing these intercultural errors to create classifications of identified wrong uses of literary translations or language correspondences in order to later explain them in class would definitely support students in their FL learning process.

References

Bellés-Calvera, L., & Bellés-Fortuño, B. (2018). Written corrective feedback with online tools in the Medicine classroom: Bombay TV. Transforming education for a changing world, Edited by Camilo López-García and Jesús Manso, *Adaya Press*, 106-119.

Corder, S. P. (1981). Error analysis and interlanguage. Oxford: OUP.

Ellis, R. (2009). Typology of written corrective feedback types. *ELT Journal* Volume, 63(2), 97-107.http://dx.doi.org/10.1093/elt/ccn023

Grammarly, Inc. 2009. English language writing-enhancement platform

Li, Y. (2000). Linguistic characteristics of ESL writing in task-based e-mail activities. *System*, 28(2), 229-245

Whittaker, R., Llinares, A., & McCabe, A., (2011). Written discourse development in CLIL at secondary school. *Language teaching research*, vol. 15, no. 3, 343-362.

Zhang, M. (2011). Error analysis and interlanguage. *Focus* 1, 85-93.