UNIVERSITATEA
Dimitrie Cantemir

COORDINATOR:
SORINA-MIHAELA BĂLAN

THE IMPACT OF DIGITALIZATION AND ARTIFICIAL INTELLIGENCE ON THE DEVELOPMENT OF POST-MODERN SOCIETY. CHALLENGES AND OPPORTUNITIES THROUGH EUROPEAN PROJECTS

EDITORS:
SORINA-MIHAELA BĂLAN, PAOLO FRIGNANI, MARIA OROIAN

PRESA UNIVERSITARĂ CLUJEANĂ

The Impact of Digitalization and Artificial Intelligence on the Development of Post-Modern Society. Challenges and Opportunities through European Projects

The Impact of Digitalization and Artificial Intelligence on the Development of Post-Modern Society. Challenges and Opportunities through European Projects

COORDINATOR:
Sorina-Mihaela BĂLAN

EDITORS:
Sorina-Mihaela BĂLAN | Paolo FRIGNANI | Maria OROIAN

PRESA UNIVERSITARĂ CLUJEANĂ
2025

Legal Disclaimer and Responsibility Statement:

All responsibility for the content of the articles published in this volume rests solely with the individual authors. Each author is accountable for the accuracy of the information, the validity of the data and references, and the compliance with academic and ethical standards. The publisher, editors, and organizing institution assume no liability for errors, omissions, or any consequences arising from the use of the information contained herein. The opinions expressed are exclusively those of the authors and do not necessarily represent the views of the editors or the institution.

ISBN 978-606-37-2687-3

DOI: https://doi.org/10.52257/9786063726873

Universitatea Babeş-Bolyai
Presa Universitară Clujeană
Director: Codruţa Săcelean
Str. B.P. Hasdeu nr. 51
400371 Cluj-Napoca, România
Tel.: (+40)-744.687.884
E-mail: editura@ubbcluj.ro
http://www.editura.ubbcluj.ro/
https://libraria.ubbcluj.ro/

Main Authors

Associate Professor PhD Sorina-Mihaela Bălan PhD

- Affiliation: "Dimitrie Cantemir" University from Târgu Mureș, Romania
- Expertise: Educational management, teacher training, digitalization, and educational coaching
- Key publications:
  - Bălan, S.-M. (2025). *The Impact of Digital Education in Group Dynamics: Case Studies at European Level*.
  - Bălan, S.-M., & Oroian, M. (2025). *Distance Educator: Training Adult Educators in the Digital Age*.

Professor Paolo Frignani PhD

- Affiliation: "Dimitrie Cantemir" University from Târgu Mureș, Romania and University of Ferrara, Italy
- Expertise: Intercultural education, teacher education, and comparative European practices in education
- Role: External consultant and evaluator in Erasmus+ initiatives and author of key contributions on inclusive education

Associate Professor Maria Oroian PhD

- Affiliation: "Dimitrie Cantemir" University from Târgu Mureș, Romania
- Expertise: Digital education, adult training, and teachers' digital competencies
- Key publications:
  - Oroian, M., & Bălan, S.-M. (2025). *Distance Education and Digital Competences of Teachers: Empirical Study*.
  - Co-author in Erasmus+ projects focused on digital education and social inclusion.

List of Authors and Affiliations

1. **Sorina-Mihaela BĂLAN** – "Dimitrie Cantemir" University from Târgu Mureș, **Romania**
2. **Paolo FRIGNANI** – "Dimitrie Cantemir" University from Târgu Mureș, **Romania** & Università degli Studi di Ferrara, **Italy**
3. **Maria OROIAN** – "Dimitrie Cantemir" University from Târgu Mureș, **Romania**
4. **Maria VOUIDASKI** – Technical Institute of Heraklion Chamber of Commerce and Industry, **Greece**
5. **Maciej MARKOWICZ** – Danmar Computers, **Poland**
6. **Anna ROUVI**, **Christina SOFRONIOU** – GrantXpert Consulting, **Cyprus**
7. **Aistė ČAPIENĖ**, **Egle VAICIUKYNAITE** – Vytautas Magnus University, **Lithuania**
8. **Rodica MOLNAR** – ACTD Mureș, **Romania**
9. **Florentina HUERTAS** – Fundacion Universidad Catolica De Valencia San Vicente, S**pain**
10. **Despoina VALLIDIS** – Meandros Lmd, **Greece**
11. **Magda GRAVINA** – Centro Universitario Sportivo – CUS Padova, *Italy*
12. **Antonio Jose Pereira RAMOS** – Associação De Futebol De Bragança, **Portugal**
13. **Iris SPANJOL** – Zajednica Sportskih Udruga Grada Rijeke, **Croatia**
14. **Constantinos KARAHALIOS** – Tool Ltd., **Greece**
15. **Ana Maria SOLIS** – SOLIS SRLS, Modena, **Italy**
16. **Mehmet DURNALI** – Zonguldak Bülent Ecevit University, **Turkey**
17. **Wei XU** – University of Surrey, **United Kingdom**
18. **Alexandru Iosif FODOR**, **Felicia Stela IONESCU** – Teaching Staff House (Casa Corpului Didactic), Târgu Mureș, **Romania**

19. **Monika CSIBI** – "Dimitrie Cantemir" University from Târgu Mureș, **Romania**
20. **Sándor CSIBI** – George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș, **Romania**
21. **Nicolae Lucian MOLDOVAN** – School Center for Inclusive Education No. 1, Târgu Mureș, **Romania**
22. **Teodora BOAR** – National College "Unirea", Târgu Mureș, **Romania**
23. **Cristiana CHIRA** – Asociația pentru Inovare și Valorizare în Educație (AIVE), **Romania**
24. **Carmen Ana TOT** – Transilvania Economic College, Târgu Mureș, **Romania**
25. **Anișoara MOGA** – School Center for Inclusive Education No. 1, Târgu Mureș, **Romania**
26. **Mihaela ȚAMBREA** – School Center for Inclusive Education No. 1, Târgu Mureș, **Romania**
27. **Edit FODOR**, **Ionuț-Ciprian COZMA** – "Electromureș" High School, Târgu Mureș, **Romania**
28. **Iringó REICHEMBERGER** – Theoretical High School "Lucian Blaga", Reghin, **Romania**
29. **Oana IERNUTAN**, **Adrian CHELARU** – "Dimitrie Cantemir" University from Târgu Mureș, **Romania**
30. **Sonia STOICA**, **Adriana TUDOR** – Theoretical High School "Lucian Blaga", Reghin, **Romania**
31. **Răzvan AZBE-VÂLCESCU**, **Vlad COSTEA-SIGARTĂU**, **Antonia RAȘCU** – National College "Unirea", Târgu Mureș, **Romania**
32. **Flaviana POP**, **Andreea CIURBA** – Theoretical High School "Lucian Blaga", Reghin, **Romania**
33. **Daniel BĂCIULESCU**, **Bianca NAGHI** – Economic College "Transilvania", Târgu Mureș, **Romania**
34. **Nadina-Cezara CIOLOCA**, **Maria-Ioana CSUMA** – Theoretical High School "Lucian Blaga", Reghin, **Romania**
35. **Angella NAGY**, **Emma FÜLÖP** – Theoretical High School "Lucian Blaga", Reghin, **Romania**
36. **Evelin SZÁSZ**, **András GŐCZI** – Theoretical High School "Lucian Blaga", Reghin, **Romania**

List of Authors and Affiliations in Alphabetical Order

1. AZBE-VÂLCESCU, Răzvan – National College "Unirea", Târgu Mureș, Romania
2. BĂLAN, Sorina-Mihaela – "Dimitrie Cantemir" University from Târgu Mureș, Romania
3. BĂCIULESCU, Daniel – Economic College "Transilvania", Târgu Mureș, Romania
4. BOAR, Teodora – National College "Unirea", Târgu Mureș, Romania
5. CAPIENĖ, Aistė – Vytautas Magnus University, Lithuania
6. CHELARU, Adrian – "Dimitrie Cantemir" University from Târgu Mureș, Romania
7. CHIRA, Cristiana – Asociația pentru Inovare și Valorizare în Educație (AIVE), Romania
8. CIOLOCA, Nadina-Cezara – Theoretical High School "Lucian Blaga", Reghin, Romania
9. CIURBA, Andreea – Theoretical High School "Lucian Blaga", Reghin, Romania
10. COSTEA-SIGARTĂU, Vlad – National College "Unirea", Târgu Mureș, Romania
11. COZMA, Ionuț-Ciprian – "Electromureș" High School, Târgu Mureș, Romania
12. CSIBI, Monika – "Dimitrie Cantemir" University from Târgu Mureș, Romania
13. CSIBI, Sándor – George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș, Romania
14. CSUMA, Maria-Ioana – Theoretical High School "Lucian Blaga", Reghin, Romania
15. DURNALI, Mehmet – Zonguldak Bülent Ecevit University, Turkey
16. FODOR, Alexandru Iosif – Teaching Staff House (Casa Corpului Didactic), Târgu Mureș, Romania

17. FODOR, Edit – "Electromureș" High School, Târgu Mureș, Romania
18. FRIGNANI, Paolo – "Dimitrie Cantemir" University from Târgu Mureș, Romania & Università degli Studi di Ferrara, Italy
19. FÜLÖP, Emma – Theoretical High School "Lucian Blaga", Reghin, Romania
20. GŐCZI, András – Theoretical High School "Lucian Blaga", Reghin, Romania
21. GRAVINA, Magda – Centro Universitario Sportivo – CUS Padova, Italy
22. HUERTAS, Florentina – Fundacion Universidad Catolica De Valencia San Vicente, Spain
23. IERNUTAN, Oana – "Dimitrie Cantemir" University from Târgu Mureș, Romania
24. IONESCU, Felicia Stela – Teaching Staff House (Casa Corpului Didactic), Târgu Mureș, Romania
25. KARAHALIOS, Constantinos – Tool Ltd., Greece
26. MARKOWICZ, Maciej – Danmar Computers, Poland
27. MOGA, Anișoara – School Center for Inclusive Education No. 1, Târgu Mureș, Romania
28. MOLDOVAN, Alexandrina-Mihaela – School Center for Inclusive Education No. 1, Târgu Mureș, Romania
29. MOLDOVAN, Erzsébet – School Center for Inclusive Education No. 1, Târgu Mureș, Romania
30. MOLNAR, Rodica – ACTD Mureș, Romania
31. NAGHI, Bianca – Economic College "Transilvania", Târgu Mureș, Romania
32. NAGY, Angella – Theoretical High School "Lucian Blaga", Reghin, Romania
33. OROIAN, Maria – "Dimitrie Cantemir" University from Târgu Mureș, Romania
34. POP, Flaviana – Theoretical High School "Lucian Blaga", Reghin, Romania
35. RAMOS, Antonio Jose Pereira – Associação De Futebol De Bragança, Portugal
36. RAȘCU, Antonia – National College "Unirea", Târgu Mureș, Romania
37. REICHEMBERGER, Iringó – Theoretical High School "Lucian Blaga", Reghin, Romania
38. ROUVI, Anna – GrantXpert Consulting, Cyprus

39. SOFRONIOU, Christina – GrantXpert Consulting, Cyprus
40. SOLIS, Ana Maria – SOLIS SRLS, Modena, Italy
41. SPANJOL, Iris – Zajednica Sportskih Udruga Grada Rijeke, Croatia
42. STOICA, Sonia – Theoretical High School "Lucian Blaga", Reghin, Romania
43. SZÁSZ, Evelin – Theoretical High School "Lucian Blaga", Reghin, Romania
44. SZÖVÉRFI, Karolina – School Center for Inclusive Education No. 1, Târgu Mureș, Romania
45. TOT, Carmen Ana – Transilvania Economic College, Târgu Mureș, Romania
46. TUDOR, Adriana – Theoretical High School "Lucian Blaga", Reghin, Romania
47. ȚAMBREA, Mihaela – School Center for Inclusive Education No. 1, Târgu Mureș, Romania
48. VAICIUKYNAITE, Egle – Vytautas Magnus University, Lithuania
49. VALLIDIS, Despoina – Meandros Lmd, Greece
50. VOUIDASKI, Maria – Technical Institute of Heraklion Chamber of Commerce and Industry, Greece
51. XU, Wei – University of Surrey, United Kingdom

Disclaimer: *The authors are solely responsible for the authenticity and content of their respective articles.*

Table of Contents

THE SECTION
"Teaching Staff and European Project Experts"

PREFACE

Sorina-Mihaela BĂLAN[1]

In an era of unprecedented technological advancement, the impact of digitalization and artificial intelligence on post-modern society is both transformative and profound. The rapid integration of these technologies into our daily lives has not only reshaped the way we work, communicate, and learn but has also challenged us to adapt to a dynamic and interconnected global environment. This volume, The Impact of Digitalization and Artificial Intelligence on the Development of Post-Modern Society: Challenges and Opportunities Through European Projects, seeks to explore these transformations through the lens of collaborative European initiatives.

At „Dimitrie Cantemir" University, we strongly believe in the power of strategic partnerships and innovative projects to address complex societal challenges. Through interdisciplinary collaboration and international cooperation, we aim to equip future generations with the skills and knowledge needed to thrive in an agile and digital world. This philosophy is reflected in our active participation in Erasmus+ projects such as E-STEAM and Future Work, which highlight the importance of equality, creativity, and adaptability in education and workforce development.

This publication also stands as a testament to the invaluable contributions of our colleagues in pre-university education, as well as the active involvement of students and even pupils in shaping the outcomes of these initiatives. By integrating diverse perspectives and fostering engagement across educational levels, we demonstrate the collective potential to innovate and address the challenges of digital transformation.

[1] Assoc. Prof. PhD, „Dimitrie Cantemir" University from Târgu Mureș, Romania. Email: bsorinamihaela@yahoo.com

The Insights presented in this volume underscore the critical role of education, research, and technology in shaping a resilient society. By examining case studies and best practices from European projects, we aim to inspire policymakers, educators, and stakeholders to harness the potential of digitalization and artificial intelligence while addressing the ethical and social implications of these advancements.

This publication is not merely an academic endeavour but a call to action—a reminder that the challenges of the digital age can be met with innovative solutions and collaborative efforts. We hope it serves as a valuable resource for those committed to fostering progress, equality, and sustainability in a rapidly evolving world.

We extend our gratitude to all contributors—academics, educators, students, and pupils—whose involvement has enriched this volume. May it inspire meaningful dialogue and actionable insights for a brighter, more inclusive future.

INTRODUCTION

Towards a Digital and Inclusive Europe: Academic Perspectives, Opportunities through Transnational Projects and the Challenges Posed by the Fragmentation of National Systems in the Absence of Common Framework

Paolo Frignani[1]

In the context of growing political, technological and social complexity, the European Union is called upon with increasing urgency to build a shared and cohesive vision for its higher education and research system. Digital transformation and artificial intelligence are profoundly redefining the foundations of contemporary societies. In this scenario, academic perspectives are intertwined with a new idea of the European university as a space for experimentation, dialogue and social responsibility. Universities, more than ever, are called upon to rethink their organisational and didactic models in the light of digital challenges: from distance learning to automated assessment, from international collaborative platforms to the integration of artificial intelligence in research. Digitisation, however, should not only be a technical tool, but a lever to strengthen inclusiveness, overcoming geographical, economic and cultural barriers that still limit access to higher education. Academic institutions are therefore today at the centre of a necessary renewal process, which entails new responsibilities and new opportunities.

If guided in a forward-looking manner, this transformation can enable the construction of a European academic space that is not only technologically advanced, but also inclusive, collaborative and resilient. The integration of universities and research centres on a continental scale is a strategic priority, not

[1] University Professor, PhD. **Vice-Rector for University Extensions – "Dimitrie Cantemir" University from Târgu Mureș (RO).** Former Vice-Rector for Distance Learning and Full Professor of Educational Technologies and Learning, University of Ferrara (IT). Email: paolo.frignani@unife.it

only to increase Europe's global competitiveness, but also to consolidate a common cultural and civic identity based on scientific progress, innovation and democratic values.

It is precisely in this context that transnational projects supported by the European Union prove to be crucial: Programmes such as Horizon Europe, Erasmus+, Digital Europe Programme and the European Universities Initiative are concrete tools in this direction. By promoting joint degrees, transnational mobility, virtual campuses, shared infrastructures and interdisciplinary collaboration, such projects contribute to an increasingly integrated and accessible academic environment, offering academic institutions the possibility of creating transnational partnerships geared towards digitisation and inclusion, and stimulating cooperation between universities, schools, public bodies, NGOs and businesses to develop shared solutions to common challenges.

Transnational projects are a valuable resource for fostering academic cooperation in a context increasingly oriented towards digital transformation and inclusion. Within the framework of European policies, several initiatives have established themselves as key instruments to support this vision. Among these, Erasmus+ plays a key role in funding strategic partnerships capable of innovating teaching and fostering social inclusion in European education systems.

Horizon Europe, with its broad and systemic scope, supports research and innovation on a continental scale, offering universities and research centres the opportunity to develop joint projects on frontier topics, while the Digital Europe Programme focuses on strengthening advanced digital skills and the conscious adoption of emerging technologies, with the aim of preparing citizens and institutions for the challenges of the digital society.

The Creative Europe Programme has also made a significant contribution, in particular by supporting projects that foster cultural accessibility through the use of innovative digital tools. All these programmes share a common purpose: to improve access to education for all, to develop inclusive digital environments and platforms, to support the training of teachers in a critical and reflective perspective on the use of technologies, and to foster the international mobility of students, researchers and education professionals.

The opportunities generated by these initiatives not only concern the acquisition of digital skills, but also the promotion of a culture of collaboration, responsibility and European citizenship. Initiatives such as microcredentials,1 the European virtual labs, open access platforms and multi-local digital campuses22 are redefining the way we think about university learning, opening up new horizons

even for those who, for economic, family or geographical reasons, are traditionally excluded from paths of excellence.

An emblematic example is represented by transnational projects promoting digital accessibility, i.e. the design of contents and digital environments that can also be used by people with disabilities. Universities, in this context, must not only participate in the definition of technical standards, but above all help to spread a culture of inclusion through training and awareness-raising.

A further field of action concerns the training of future professionals in education, communication and public administration. Systematically including in university curricula modules devoted to digital ethics, European citizenship and digital inequalities is an effective strategy to prepare a generation of citizens and workers capable of acting responsibly in the digital ecosystem. It is not just a matter of acquiring technical skills, but of understanding the power dynamics, economic logic and socio- political implications that govern the digital space.

Through these efforts, Europe is shaping a new post-national, fluid and interconnected educational and scientific model capable of responding innovatively to major global challenges, such as climate change, the ethics of artificial intelligence and digital inclusion.

However, despite encouraging signs, the path towards a unified European academic space remains fraught with obstacles. One of the most critical issues is the persistent heterogeneity of the education systems of the twenty-seven Member States, each of which maintains different regulatory structures, quality standards, funding schemes and legislative frameworks. The divergences affect all levels of academic governance: from the structure of degrees to research evaluation mechanisms, from degrees of university autonomy to contracts for teaching staff, to access and student support policies. This fragmentation not only limits effective cooperation between institutions, but also hampers mobility, undermines the scalability of good practices and undermines the coherence of the European Higher Education Area (EHEA) and the European Research Area (ERA) as a whole. A key element aggravating this situation is the absence, at EU level, of a central federal structure comparable to a Ministry of Universities and Research. While each member state has its own national apparatus with defined competences, the EU does not yet possess a single authority capable of coordinating university and science policies with regulatory powers. As a result, many of the initiatives promoted at European level remain on a voluntary and non-binding basis, and depend heavily on the political will and administrative capacity of individual countries. This institutional gap weakens the effectiveness of even the most

innovative and ambitious projects, forcing them to move within a patchwork of divergent and often incompatible regulations.

To fully realise the vision of a digital and inclusive Europe, capable of facing the challenges of the post-modern society, it is indispensable to strengthen academic governance and coordination mechanisms at continental level. This could eventually translate into the creation of a European Higher Education and Research Agency or the development of a more binding legal framework based on shared strategic objectives and a common commitment of the Member States. At stake is the concrete possibility of building a new European university model: agile, collaborative, competitive, capable of attracting talent, distributing resources fairly, and training new generations to deal consciously and responsibly with the ethical, social and economic implications of artificial intelligence and digital technologies.

This volume, which brings together contributions from scholars, researchers and practitioners from different disciplinary fields, is part of this framework of reflection and proposal. Under the title *The Impact of Digitalization and Artificial Intelligence on the Development of Post-Modern Society: Challenges and Opportunities Through European Projects*, the conference from which these proceedings originate sought to investigate not only the transformative potential of digital innovation, but also the institutional, educational and ethical frameworks required to orient it in a just and sustainable manner. The contributions collected here intend to offer, at the same time, critical tools and project ideas, participating in the construction of a European academic future that is truly inclusive, cooperative and up to the great transformations of our time.

Bibliographic references

1. AI4EU (2021). The European AI on Demand Platform, retrieved from https://www.ai4eu.eu.
2. European Commission (2017). European Pillar of Social Rights (https://commission.europa.eu/strategy-and- policy/priorities-2019-2024/economy-works-people/jobs-growth-and-investment/european-pillar-social- rights_en).
3. European Commission (2020). Digital Education Action Plan 2021-2027, (https://education.ec.europa.eu/focus-topics/digital/digital-education-action-plan).
4. European Commission (2021). 2030 Digital Compass: the European way for the Digital Decade (https://eur- lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021DC0118).

Distance Education - A Transformative Approach for Adult Learning in the Digital Era

Sorina-Mihaela BĂLAN[1], Maria OROIAN[2], Maria VOUIDASKI[3], Maciej MARKOWICZ[4], Anna ROUVI[5], Christina SOFRONIOU[6], Aistė ČAPIENĖ[7], Egle VAICIUKYNAITE[8]

Abstract. *The rapid evolution of digital technologies has redefined education, particularly in adult learning. Distance education has emerged as a vital tool to address the dynamic needs of vocational education and training (VET) providers. This paper explores the outcomes of the Erasmus+ project "Distance Educator: Training Educators of Adults in the Digital Age," focusing on its innovative curriculum, digital tools, and methodologies for adult education. It highlights the project's aim to enhance digital competencies and teaching skills, empowering educators to navigate the challenges of a digital-first society.*

Keywords: *distance education, digital tools, adult learning, vocational training, Erasmus+.*

Introduction

The COVID-19 pandemic had a significant impact on education, particularly in vocational training and adult education. Many educators and trainers faced challenges in adapting to online learning, which especially affected vulnerable groups (women, migrants, adults with low skills). The project aimed to enhance the digital competences of adult educators in order to ensure the continuity of education and adapt to the new requirements of the post-pandemic labor market.

[1] „Dimitrie Cantemir" University from Târgu Mureș – România. Email: bsorinamihaela@yahoo.com
[2] „Dimitrie Cantemir" University from Târgu Mureș – România. Email: oroianmaria@yahoo.com
[3] Technical Institute of Heraklion Chamber of Commerce and Industry – Greece. Email: vouidaski@katartisi.gr
[4] Danmar Computers – Poland. Email: m.markowicz@danmar-computers.com.p
[5] GrantXpert Consulting – Cyprus. Email: anna@grantxpert.eu
[6] GrantXpert Consulting – Cyprus.
[7] Vytautas Magnus University – Lithuania. Email: aiste.capiene@vdu.lt
[8] Vytautas Magnus University – Lithuania.

Distance education has become a cornerstone for modern learning, offering flexibility and accessibility to diverse learners. The "Distance Educator" project under Erasmus+ aims to redefine adult education by equipping educators with essential digital skills. This initiative addresses the growing demand for effective online teaching strategies and tools, particularly in the post-pandemic context.

Project Overview results

https://erasmus-plus.ec.europa.eu/projects/search/details/2021-1-RO01-KA220-VET-000034702

Project Details

Name: Distance Educator - Training Educators of Adults in the Digital Age
Project Number: 2021-1-RO01-KA220-VET-000034702
Implementation Period: February 15, 2022 – February 14, 2024

Coordinator:

1. DIMITRIE CANTEMIR UNIVERSITY, TG. MUREȘ, ROMANIA

Partners:

2. KEK TEHNIKES SHOLES EPIMELITIRIOUIRAKLEIOU, Greece
3. DANMAR COMPUTERS SPZOO, Poland
4. GRANTXPERT CONSULTING LIMITED, Cyprus
5. VYTAUTO DIDZIOJO UNIVERSITETAS, Lithuania

(see the Figure 1. The antet of the project including Project logo and Partners logos)

Figure 1. The antet of the project including Project logo and Partners logos.

To broaden the expertise and experience of the partnership, **the associated partners** are involved in the project.

Romania: - The Mureş County School Inspectorate is a public institution whose mission is to integrate Mureş education into a modern paradigm, by ensuring a stimulating framework, conducive to the development of quality education; he "TRANSILVANIA" Economic College (CET) prepares VET specialists for economic, administrative, tourism and public catering specializations.; "Unirea" National High School offers a guarantee for success through its opening. In VET sector prepare students in Mathematics-Informatics Intensive Informatics; - CJRAE offers services aimed at correlating the educational offer with the specific requirements of the labor market and implementing modern teaching learning-evaluation and counselling strategies, by carrying out specialized; DEER's mission is the distribution of electricity to high-quality standards, safely, permanently, affordably and sustainably.

Poland: was established to provide comprehensive development opportunities in the region, focusing and mobilizing the potential of local communities and providing consultancy. Contribution: exploitation and sustainability: EDUKATOR Education Centre - The company employs highly qualified trainers and advisors with special attention to their qualifications, and a very rich experience in training; Cluster of IT companies in Eastern Poland Rzeszow.- Contribution: consultancy in the development of IT solutions and sustainability.

Greece: ELMEPA - The Hellenic Mediterranean University of Crete is a public academic institution in Greece. Consulting the contribution as a member of the LAG and exploitation. - The Institute of Lifelong Learning in Athens is a research and education institute based in Athens, Greece, encouraging and improving innovation processes, mainly in the fields of education and lifelong learning, human capital development, knowledge society, and social inclusion. Contribution: exploitation and sustainability. - Heraklion Chamber of Commerce and Industry: provides substantial services to its entrepreneurial members and promotes solutions to local problems.

Lithuania: Kaunas University of Applied Sciences- Consulting the contribution as a member of the GAL and dissemination; University of Applied Engineering Sciences - Contribution: exploitation and sustainability.

Cyprus: Nicosia Chamber of Commerce and Industry: the role of the Chamber is to actively pursue the economic, social, cultural, environmental and regional development of the Nicosia district. It provides substantial services to its entrepreneurial members and promotes solutions to local problems. Contribution: exploitation and sustainability. European University of Cyprus, Department of Education.

To enhance the digital and teaching competencies of adult educators, we are directly involved in project activities with such players. The abovementioned direct

and indirect target group representatives were approached during the preparation of this project, identified to be valuable for the distinction of activities, tools, and methodology that they could find interesting and useful in their practice/work. They were approached face to face, via contact centres at universities, during meetings conducted in different projects, and by phone. Some of them showed interest in participating in this project. With the implementation of the project, participants were informed and engaged by making use of partners' dissemination channels, as well as the project website, and social media, at events organized for VET education or training for SMEs and via established networks of associated partners.

Objectives

1. Enhance digital and teaching skills of VET providers.
2. Develop innovative educational materials.
3. Foster sustainable online learning methodologies.

Project idea

Among rapid technological and economic changes, lifelong learning became essential, but the COVID-19 pandemic disrupted all levels of education, especially adult learning and vocational training. Vulnerable groups, like women and migrants, were disproportionately affected as face-to-face programs halted. The crisis in accelerated digitalization, emphasizes adult learning's crucial role in a COVID-affected world. The project aimed to enhance educators' digital and teaching skills, supporting them in adapting to the new reality. The project aimed to ensure continuous learning during the pandemic by directly assisting educators and indirectly benefiting disadvantaged individuals. While online learning offered potential solutions, barriers like time constraints persisted.

Project target group

The project's target group is primarily the educators, i.e. groups of people who are responsible for vocational education and training, ideally, to bring about sustainable change. This group includes trainers of instructors, instructors in companies, heads of the department, institution leaders, consultants, mentors, and inter-company training centers, teachers of vocational schools.

All of Europe and many regions of the world beyond were severely affected by the coronavirus pandemic. The daily lives of millions of people changed radically, many were worried about their health, jobs, and well-being. Across Europe, adult education (AE) providers were forced to cancel or virtually continue courses. The loss of the financial basis through these measures had dramatic consequences for course providers, the sustainability of institutions, staff, and,

finally, learners. However, to mitigate the consequences of the social and economic crisis that followed this pandemic, adult education and training were needed more than ever. The COVID-19 crisis resulted in a significant increase in online learning by adults. Much of the training that had started as F2F in classroom environments was pursued online. Individuals were encouraged to use the time freed up by short-time work schemes to take up new training. The crisis provided a powerful test of the potential of online learning. It also highlighted its key limitations, including the prerequisite of adequate digital skills, the difficulty of delivering traditional work-based learning online, and the struggle of educators to turn a F2F course into an online course.

This brief discussed the potential of online learning to increase adult learning opportunities and identified some key issues that the crisis had highlighted. Addressing these issues could contribute to expanding online learning provision in the post-crisis period and to making it more inclusive. The project met those issues and tried to solve some of them through the outputs and training material.

Direct outputs of the project implementation

1. **EduAdult Curriculum**
    - Focus: Framework for developing training content.
    - Includes modules on:
        - Skills/characteristics of an adult educator.
        - Teaching methods and techniques.
        - Digital tools for distance learning.
        - Cultural awareness.
        - Designing online teaching activities and assessments.
2. **EduAdult Handbook**
    - A guide for trainers to develop methodologies for distance learning.
    - Features a self-assessment tool to evaluate digital competencies.
3. **EduAdult Learning Application**
    - Offers personalized training pathways.
    - Includes tools for self-assessment and targeted skill enhancement.

R1. IO1: The EduAdult curriculum for vet providers was developed, aimed to define the framework for developing the training content in the application under the IO3. It developed an innovative curriculum on online distance learning addressed to concrete target groups of educators, such as trainers of instructors, instructors in companies, heads of departments, institution leaders, consultants, mentors, and inter-company training center staff. The project faces the multiple

challenges needed for a Covid-affected society, continue their learning offers, and adapt to the new situation.

Links:

Current Status Review Report

Curriculum pentru educatori la distanță

Rapoarte NQF

OER Presentation

R2 IO2: The EduAdult Handbook and self-assessment tool were the outcomes of the previous Intellectual Output. It served as a guide for trainers who wished to develop an individual methodology for distance learning. The Handbook was implemented through the C1 short-term mobility intended to train trainers of trainers, educators, etc. A self-assessment tool was developed to review the current knowledge in distance learning and the participants' digital skills. This tool utilized the widest set of indicators and was integrated into the app. The results of the tool showed a personalized training pathway for each participant. A guide for trainers to understand this tool was also developed. The IO provided a unique solution for supporting skills development for the transition to distance learning.

Links:

Instrument de autoevaluare

Ghid pedagogic

Manualul EduAdult

R3 IO3: The EduAdult application for adult educators was developed. The consortium chose the mobile application as the best and most adapted way to reach any target group. The EduAdult application ensured personalized training pathways by initially testing the knowledge and awareness of digitalization processes among the target group, including adult educators, mentors, consultants, and wannabe educators. The app also elaborated a personalized strategy for the participants to address the weak points and empower their approach to digitalization processes.

Links:

https://play.google.com/store/apps/details?id=eu.dcnet.distanceeducator

https://apps.apple.com/us/app/digieduadult/id6469835390

Transnational Meetings

TPM1 – Lithuania, Kaunas, 02–03.06.2022

TPM2 – Cyprus, Nicosia, 12–13.09.2022

TPM3 – Poland, Rzeszów, 15–19.05.2023

TPM4 – Romania, Târgu Mureș, 28–29.11.2023

The "Train the Trainers" blended mobility for adult learners, aimed at AE educators working with trainers, educators, mentors, and consultants, was hosted by Danmar Computers between May 16 and 18, 2023, in Rzeszów, Poland. Each partner delegated 2 participants; total training duration: 24 hours (3 days × 8 hours).

Multiplier events were conducted by each partner, where project aims and activities implemented in their region were presented (E1, E2, E3, E4, E5)

Outcomes achieved through the implementation of the project included: Preparing a basis for establishing the new curriculum in distance learning (IO1); Developing innovative educational materials with relevant and actual topics in distance learning; Better educational preparation for educators and VET teachers using IO2A2 The HANDBOOK, IOA2.A11 Self-assessment tool, IOA2.A12 Methodological guide; IO3 Mobile App; New knowledge gained from neighbouring regions; All results (intellectual outputs, multiplier events, and training activities) were described in specific parts.

The project focused on addressing the challenges faced by adult education providers, particularly in the Vocational Education and Training (VET) sector, amidst the COVID-19 pandemic. It aimed to empower educators with the skills and resources necessary for effective distance education. Key outputs included the development of the EduAdult curriculum, handbook, and mobile application, tailored to enhance teaching competencies in online learning

The innovative approach

The aim of the project was to enhance the digital and teaching skills and competencies of the adult learning providers, VET providers, and educators required in the digital age and allow them to face the multiple challenges needed for a COVID-affected society, continue their learning offers, and adapt to the new situation. The adult educator (AE) or the wannabe AE learned how adults learn online – and at a distance – drawing on crucial theories. They evaluated technologies for supporting online and distance learning in specific contexts, drawing on a range of experiences and research to successfully design engaging and inspiring online courses.

In this project, they discovered how to use the newest educational methods to create a learner-centered classroom and online classroom that was perfectly suited for adult learners. They were introduced to adult learners' unique needs and motivations and found out just what expectations they had. They examined their

learners' different learning styles and multiple intelligences and looked at how they could teach to each learner's strengths. They delved into a host of innovative teaching techniques that turned their adult learners into active learners and set them up for success; discovering high-tech, low-tech, and no-tech educational tools they could use to capture and hold their students' attention.

The project is innovative for each participating organization as it expands their possibility to support VET institutions and distance education educators.

Each of the partners has in its educational offer in some aspects, but no partner has it as a whole and especially none of the partners offers any training through m-learning. The project's innovation at tool level (m-learning) is part of the Commission's policy on mobility and better matching of teaching to groups and content: "That it facilitates and promotes labor mobility within the EU and better matches the workforce of work" [E2020].

The major innovation of the project is that it offers the target groups the opportunity to improve their digital skills, teach distance learning skills and contribute to the expansion of online learning in the post-crisis period and make online learning more inclusive.

The crisis provides a powerful test of the potential of online learning. It also highlights its key limitations, including the prerequisite of adequate digital skills, the difficulty of delivering traditional workplace learning online, and the struggle of educators to convert a face-to-face course into an online course.

This summary discusses the potential of online learning to increase adult learning opportunities and identifies some key issues that the crisis has highlighted. Addressing these issues could help expand online learning offerings in the post-crisis period and increase inclusion. The project meets these problems and tries to solve some of them through the results and the training materials and therefore they should be provided. The project can provide the knowledge and know-how of distance learning to all adult educators.

The project developed tools that offer new information, and new knowledge, transferable through ICT tools. The methods proposed by the project are innovative - they equip people with knowledge, skills and help them accumulate skills in distance education.

The innovative character of the project and the high quality of the delivered results are ensured by a wide base of international and inter-organizational knowledge and the integration of partners with the best practices developed in the scope of the project.

The partners have implemented projects aimed at adult education. The main demarcation line is that our project (unlike other projects) focuses on broad target groups within educators, i.e. groups of people who are ideally responsible for vocational education and training. This group of people includes, for example, trainer trainers, company trainers, heads of department, head of institution, consultants, mentors, in inter-company training centers as well as vocational schoolteachers and VET trainers and providers. It is an example of a systemic approach to the problem of distance education in adult education.

After searching the Erasmus+ Project Results Platform, the Partnership noticed only a few projects whose main objectives could be related to this proposal, but which did not use the ICT tool (m-learning). Education will be adapted to the needs identified in the countries involved in previous projects. and development activities. One of the most important aspects of added value is that, when viewed from a certain perspective, the project will be relevant for all EU Member States.

After testing the developed results, representatives of the target group in other countries can easily transfer the developed courses. Additional work is needed in the form of translation of commands and descriptions, the lessons learned from the projects can be applicable in the European debate

Conclusion

The "Distance Educator: Training Educators of Adults in the Digital Age" project exemplifies the transformative potential of distance education in adult learning. By fostering digital literacy and innovative teaching methods, it equips educators to meet the demands of a rapidly evolving educational landscape. This initiative sets a benchmark for future projects aiming to enhance the quality and accessibility of adult education.

References

1. Bălan, S.-M. (2024). *Distance Educator: Training Educators of Adults in the Digital Age*. Dimitrie Cantemir University.
2. Eurostat. (2023). Digital Skills Indicator 2.0. *EU Community Survey on ICT Usage in Households and by Individuals.*
3. Erasmus+. (2024). Project Results: Distance Educator. Retrieved from https://distance-educator.erasmus.site/

Education and Artificial Intelligence: Between Potential, Limits, and Responsibility

Paolo FRIGNANI[1]

We are living through a historical moment of profound transformation that affects every aspect of our society. Education is also being reshaped by these changes. Artificial Intelligence is radically changing the way we learn, teach and organise educational institutions. Its potential is enormous, but it is essential that it is integrated in an inclusive, equitable and sustainable way so that no one is left behind. We need to think about the future scenarios we may face and the policies to be adopted, so that AI becomes a tool for *empowerment* and not an additional factor of inequality.

When humans create new technologies, they often end up becoming prisoners of them, losing the ability to distinguish between fiction and reality. This is not a new dynamic: just think of the reactions that followed the launch of the first personal computers, hailed as miraculous solutions to all of humanity's problems. Today, we risk making the same mistake with artificial intelligence, taking it for granted that it can manage every aspect of our lives.

But we must remember that technology has no real intelligence. The real problem lies in the often-superficial way in which we deal with it. The uncontrolled spread of 'smart' devices risks multiplying 'unintelligent actions' in society. As Gianni Prandi has noted, AI has no cognitive capabilities: it cannot replicate the mental processes that generate human knowledge. On the contrary, it functions more like an extraordinary archive, capable of rapidly storing and categorising large amounts of data, but without creativity or awareness. In short, he is a high-level learner, not a genius.

Before delving into this topic, I would like to share some thoughts - drawing on my background as a genetic psychologist influenced by Piaget - on how humans

[1] Prof. univ. **Vice-Rector for University Extensions – Cantemir University from Târgu Mureș (RO).** Former Vice-Rector for Distance Learning and Full Professor of Educational Technologies and Learning, University of Ferrara (IT). Email: paolo.frignani@unife.it

acquire and organise knowledge, so that we can better understand the comparison with artificial intelligence.

Psychological theories such as constructivism, cognitive psychology, sociocultural theory and evolutionary psychology help us understand the complexity of human learning, highlighting the importance of critical thinking, social context and emotions. When we analyse AI through this lens, the differences between human and machine learning become clear.

Piaget identified four main stages of cognitive development in children: sensorimotor, preoperational, concrete operational and formal operational. These stages describe children's increasing ability to understand and interact with the world around them, mainly through experience, discovery and social interaction. Artificial intelligence, on the other hand, does not go through any natural stages of development. For example, today's AI does not have personal experiences nor does it physically engage with the world in a sensorimotor sense. However, it can be programmed to recognise patterns and adapt based on data: a process somewhat reminiscent of Piaget's concrete operations stage, in which children begin to use logic, albeit with limitations.

A central concept in Piaget's theory is that of cognitive schemata, mental structures that help individuals organise and interpret information. Schemas evolve through assimilation (incorporation of new information into existing structures) and accommodation (modification of these structures to incorporate new experiences).

In Artificial Intelligence, we find a loose analogy in supervised and unsupervised learning. Supervised learning aims to make accurate predictions based on labelled data, while unsupervised learning seeks to find patterns or groupings in unlabelled data, an exploratory process. For example, machine learning algorithms 'assimilate' new data by adapting internal structures (e.g. neural networks) to improve pattern recognition. However, assimilation in the Piagetian sense implies an active and creative transformation of thought, a level of introspective awareness that current AI lacks.

Piaget's constructivist model sees learning as an active process in which individuals construct their own knowledge through interaction with the environment. In contrast, AI operates as a passive data processor, devoid of subjective experience or true interaction with the world. Even in its most advanced forms, AI cannot engage in active constructivism. The knowledge it acquires comes entirely from external models and training. However, advances in reinforcement learning suggest the possibility of AI developing a form of pseudo-autonomy.

Seymour Papert, a student of Piaget and a pioneer of technology-assisted learning, extended these ideas by developing the concept of 'constructionism', an extension of constructivism that emphasises learning by doing, especially through

hands-on experiences. In this vision, Artificial Intelligence could act as an active partner in learning.

Papert emphasised that building things - physically or conceptually - helps students internalise knowledge in a deeper way. He introduced computers as creative tools for learning, developing the Logo programming language to help children learn mathematics and logic in an interactive way.

In this context, AI can support autonomous exploration and learning. For example, a constructionist AI system could guide students through challenges, provide feedback and encourage hypothesis testing and experimentation. This approach enables personalised learning experiences and allows the AI to adapt to the pace and needs of each student.

Another key figure is the Italian philosopher Luciano Floridi, who introduced the concept of the 'infosphere' to describe the global environment in which all information is created, exchanged and processed. This infosphere encompasses not only human interactions, but also Artificial Intelligence and algorithmic processes, representing a turning point in the ontology of information and in the understanding of our contemporary cognitive environment, seen as the entire informational environment consisting of all information-based entities, processes and relationships, including biological, artificial and hybrid agents. In this sense, the infosphere is not just 'cyberspace' or the digital world, but an ontologically real and pervasive dimension in which all forms of life and knowledge are situated and interconnected.

According to Floridi (2007), our existence today is defined by an '**onlife**' state, which overcomes the traditional dichotomy between online and offline. We live in an integrated informational ecosystem, in which the production, processing and interpretation of information profoundly influence cognitive, relational and decision-making processes.

This approach finds an interesting convergence with **Jean Piaget**'s theory of knowledge, for whom knowledge is not a simple passive acquisition of data, but the result of a **dynamic interaction between subject and environment**. In the Piagetian constructivist perspective, the individual actively constructs his or her knowledge through adaptation, which includes the processes of assimilation and accommodation. Applying this logic to the context of the infosphere, we can interpret the contemporary cognitive subject as an **agent that constructs knowledge in continuous interaction with a ubiquitous and dynamic informational environment**.

The pedagogical dimension implicit in this framework is significant: the infosphere is not a mere data container, but an **interactive cognitive environment**, requiring new epistemic, critical and ethical skills. Learning, in this context, is configured as **embedded in a digitally mediated information ecosystem**, where the ability to evaluate, select and interpret sources becomes central. Ultimately, the

infosphere presents itself as a **new epistemological and ethical paradigm**, imposing a revision of the classical categories of knowledge, identity and responsibility.

The interaction between subject and infosphere recalls the Piagetian dialectic between organism and environment, but in a context radically transformed by the presence of AI and the pervasiveness of digital technologies. Understanding and consciously inhabiting the infosphere today means rethinking the formation of the cognitive subject in ecological, ethical and transdisciplinary terms.

This is why the advent of Artificial Intelligence (AI) and its increasing pervasiveness in everyday life are radically transforming the cognitive and informational environment in which we act. Knowledge is no longer generated exclusively by the human subject. It is configured as the result of a distributed co-construction between human and artificial agents, within a dynamic and interconnected information ecosystem.

In this context, AI systems do not merely perform instrumental functions, but actively participate in the selection, processing and distribution of information, thus contributing to the shaping of the **cognitive order**.

This change is partly analogous to what **Jean Piaget** argued in his learning theory: knowledge is not a passive reflection of reality, but an active construction process mediated by the interaction between the subject and its environment. In today's reality, however, this environment includes **non-human agents** such as chatbots, recommendation engines, predictive systems and voice assistants. The interaction between subject and environment thus extends to cognitive cooperation between humans and intelligent technologies, resulting in a **hybrid and distributed epistemic process**.

In this new cognitive scenario, AI is not limited to being a technical tool, but takes on the characteristics of a **new cognitive agent**, capable of influencing the formation of knowledge and the perception of reality. This change implies a profound revision of the ways in which we understand education, which is called upon to form citizens capable of interacting with AI in a critical and responsible manner.

This transformation calls for a profound reflection on the function of schools and universities, which must rethink their goals and methodologies to train individuals capable of inhabiting the infosphere in a critical, responsible and creative manner.

Didactics must be rethought not in terms of mere digitisation of content, but as a training process that puts students in a position to **consciously interact with AI**. The teacher takes on a transformed role in this framework: from being a transmitter of notions he becomes a **critical facilitator**, a designer of learning environments in which smart technologies are tools for the development of metacognitive, ethical and relational skills.

There is a need to move beyond a technical view of digital literacy, to promote an **informational and algorithmic literacy**, enabling students to understand how information is selected, organised and presented by algorithms. The educational use of AI can take the form of activities such as **collaborative writing with language assistants**, **problem-solving in simulated environments**, or **critical analysis of automatically generated content**, always with the aim of training **cognitively and ethically autonomous subjects**.

If Artificial Intelligence is today a new cognitive actor in the infosphere, schools and universities are called upon to rethink their educational mission. The objective is not simply to teach how to use technological tools, but **to train subjects capable of understanding, governing and critically evaluating them**. Education must become a conscious mediating device between human and artificial, capable of building a new informed humanism, in which technology is at the service of personal growth, social cohesion and cultural sustainability.

Ultimately, if Artificial Intelligence is a new cognitive agent in the infosphere, education must evolve in an **ecosystemic and integrative** direction, in which cognitive, digital, ethical and epistemological competences are formed in a joint manner. Education can no longer disregard the understanding of the functioning and impact of AI: it now becomes **the privileged terrain for the construction of an informed humanism**, capable of governing technologies without being subjected to them, and of inhabiting complexity without renouncing responsibility.

On the operational level, this implies the adoption of educational practices that stimulate collaboration between students and AI, for instance in assisted creative writing, in solving complex problems, in scenario simulation, in the elaboration of multimedia content, always maintaining a metacognitive reflection on the process at hand. The goal is not just efficiency, but the development of **a critical awareness of the informational environment**, including the ability to recognise the limits and distortions inherent in automated systems.

Artificial Intelligence is already proving to be a powerful tool in the field of education. It enables personalised learning, automatic assessment, classroom management support, performance monitoring, content creation and real-time feedback. These functions make teaching more efficient, inclusive and adapted to the needs of individual learners.

Artificial Intelligence also improves accessibility through tools such as speech recognition, machine reading and translation, helping students with disabilities or different language backgrounds. It can identify students at risk of dropping out and suggest targeted interventions.

In combination with virtual and augmented reality, Artificial Intelligence can create immersive learning environments, such as simulated science experiments or virtual tours of history, that improve understanding and motivation, especially in complex subjects.

However, this transformation comes with challenges. It is crucial to use AI ethically and responsibly. AI can never replace human empathy or the nuances of educators' judgement, but it can help them improve the quality of education. Emerging technologies can help make quality education available even in the most remote areas, but this requires substantial investment in digital infrastructure and bridging the digital divide.

The ethical design of AI must ensure fairness, transparency and inclusion. Algorithms must avoid reinforcing biases based on ethnicity, gender or socioeconomic status. Regular checks, anonymous data processing and positive feedback systems are essential for fair implementation.

The impact of Artificial Intelligence is particularly effective in higher education, where students follow different learning paths. Intelligent platforms allow students to study at their own pace, delve into topics of interest and receive customised resources. Artificial Intelligence can act as a digital tutor, guiding students through difficult concepts and providing immediate feedback.

In academic research, Artificial Intelligence is an invaluable resource. It allows large data sets to be analysed quickly, speeds up research processes and helps researchers access and synthesise large amounts of academic literature.

In highly specialised fields such as medicine, engineering and applied sciences, AI enables advanced simulations and immersive experiences that enhance practical training.

As the university population is increasingly heterogeneous, AI plays a key role in promoting inclusion by tailoring resources to individual needs and reducing barriers to higher education.

Finally, the training of teachers, including academics, in advanced technologies such as AI is no longer optional, but imperative. As we have seen, AI is redefining how people learn, research and interact with knowledge. Teachers must be equipped to use these tools critically and creatively, recognising both their potential and limitations.

The role of the teacher, in this scenario, changes radically. It is no longer limited to being a transmitter of notions, but takes shape as a **critical mediator**, designer of complex learning environments and accompanist of meaning processes. He or she must help students develop the capacity to interpret the content generated by AI, understand the criteria by which it is produced, assess its reliability, and reflect on the ethical and social implications of such tools. In this sense, the teacher acts as a guarantor of a **pedagogy of responsibility**, capable of supporting an information ethic in the Floridian sense, attentive to the cognitive sustainability of the informational environment.

This orientation is fully consistent with what is expressed in the *European Framework of Digital Competences for Citizens* (DigComp 2.2, 2022), which identifies, among the fundamental competences, not only digital literacy and communication

through digital technologies, but also critical evaluation of information, awareness of the influence of **algorithms** and understanding of the social impact of AI**.** At the Italian regulatory level, the *Italian National Digital School Plan* (PNSD) and the most recent *Guidelines for the teaching of civic education* (Ministerial Decree 35/2020) place an increasingly strong emphasis on education for digital citizenship, sustainability, and the ethical use of technology, outlining a framework in which AI is a recognised presence, albeit still not very systematised at curricular level. Investing in teacher education is an investment in the future of society, because only well-prepared educators can inspire generations of competent, globally aware and adaptable citizens.

Essential Bibliography

1. Floridi, L. (1999). *Information ethics: On the philosophical foundation of computer ethics. Ethics and Information Technology*, 1 (1), 37-56.
2. Floridi, L. (2007). *A look into the future impact of ICT on our lives. The Information Society*, 23 (1), 59-64.
3. Floridi, L. (2014). *The 4th revolution: How the infosphere is reshaping human reality*. Oxford University Press.
4. Floridi, L. (2020). *The ethics of artificial intelligence*. Oxford University Press.
5. Capponi M. *A toy for the mind. The "cognitive computing" of Seymour Papert*. Morlacchi (2009).
6. Papert, S. (1980). *Mindstorms: Children, computers and powerful ideas*. Basic Books.
7. Papert, S. (1999). *The Children's Machine: rethinking. School in the age of the Computer*. Basic Books.
8. Piaget, J. (1950). *The psychology of intelligence*. Routledge & Kegan Paul.
9. Piaget, J. (1970). *L'épistémologie génétique*. PUF.
10. Prandi, G. (2022). *Media Intelligence: Artificial Intelligence at the Service of Communication*. FrancoAngeli (Italian edition; English reference).
11. Calvani, A. (2021). *Educational technologies for inclusion*. Carocci (Italian edition; translated reference).
12. OECD (2021). *Artificial Intelligence and the Future of Skills, Volume 1*. OECD Publishing.
13. UNESCO (2021). *AI and education: A guide for policy makers*. UNESCO.
14. Carretero, S., Vuorikari, R., & Punie, Y. (2022). *DigComp 2.2: The Digital Competence Framework for Citizens with new examples of knowledge, skills and attitudes*. Publications Office of the European Union.
15. Ministry of Education (2020). *Guidelines for the teaching of civic education*. MINISTERIAL DECREE 35/2020.
16. Miur (2015). *National Digital School Plan*.

Educational Projects – Bridges to the Future. Reflections after the UDC Workshop "Project Management – from Writing to Implementation"

Sorina-Mihaela BĂLAN[1]

Abstract. *The workshop "Project Management - from Writing to Implementation" („Managementul proiectelor – de la scriere la implementare") organized at the "Dimitrie Cantemir" University in Târgu Mureș brought together representatives of university and pre-university education, experts in non-formal education, NGOs, pupils, students, parents and practice partners. Beyond the formative purpose, the event represented a model of trans-institutional collaboration in which educational actors jointly generated project ideas relevant to the needs of the community. Through a meta-analysis of the presentations and activities carried out, the article reflects the importance of European projects in the sustainable development of education and proposes an integrated approach to skills training.*

Keywords: *Erasmus+, educational projects, transversal skills, digitalization, inclusion, sustainability, project writing, non-formal education, European partnerships*

Introduction

In an educational context in continuous transformation, European projects are essential tools for innovation, inclusion and internationalization. The workshop *"Project Management - from writing to implementation"* organized within the Scientific Communications Session of UDC Students (May 14, 2024) was a fertile space for reflection and collaborative construction. Under the umbrella of the Department of Strategies, Programs and Projects of the "Dimitrie Cantemir" University, coordinated by the author of the article, the event highlighted examples of good practice, models of educational intervention and real synergies between school, university, family and community. The official opening of the workshop was

[1] Assoc. Prof. PhD, "Dimitrie Cantemir" University from Târgu Mureș; Vice-Rector for Quality Management and Projects. Email: bsorinamihaela@yahoo.com

carried out by Assoc. Prof. Dr. Ramona Rațiu, interim rector of the "Dimitrie Cantemir" University from Târgu Mureș, who sent the participants an inspirational message regarding the fundamental role of educational projects in the real and sustainable transformation of the education system.

Presentation session: Examples of good practice in European projects

The workshop participants reflected on multiple dimensions of educational projects, from social entrepreneurship and digital education (Claudia Duicu – ITC Edustem), to international partnerships for training STEM skills (Cristiana Chira – Colegiul National "Unirea") or developing an organizational culture of trust (Carmen Nicoară – Școala Petelea). The presentation given by the undersigned illustrated the results of the involvement of the "Dimitrie Cantemir" University from Târgu Mureș in strategic Erasmus+ projects such as e-STEAM (equal opportunities in STEM education), Future Work (training for the digitalized labor market) and SITE – EduAdult (adult education through digital tools).

Beyond the thematic content, the workshop focused on: co-creation of solutions adapted to local realities; active involvement of students, pupils and parents in education through projects; capitalization of inter-institutional professional networks.

The presentations provided a diverse overview of successfully implemented European projects:

Claudia Duicu, representing the non-formal education center ITC Edustem, provided a practical look at the benefits of European funding for educational start-ups. Founded in 2019 through the Start-Up Plus program (POCU 2014-2020), the center offers courses for children and young people, workshops, educational camps, and since 2022 it has been a partner in two Erasmus+ projects: KA210 YOU and KA153 YOU. The focus was on inclusion and equitable access to education through partnerships such as the one with *Save the Children*.

Prof. Cristiana Chira presented the Erasmus+ ROMUAS project ("Recover outdated machines using Arduino for scaling up ESTEAM and green skills in VET students"), carried out between 2022–2024, coordinated by the "Unirea" National College in Târgu Mureș, in partnership with institutions from Portugal, Spain, Italy and Croatia. The project aims to train an adaptable workforce through STEM skills, digital education and ecological practices. International mobilities and Erasmus+ accreditation in school education were highlighted.

Prof. Carmen Angela Nicoară presented the "School of Trust - School of the Future" initiative, a national project that starts from the idea that the transformation

of the educational system is achieved from within, with a focus on the sustainable development of each school community. Under the motto "Be the change you wish to see in the world" (Mahatma Gandhi), the project works directly with teachers, support staff and parents, contributing to the formation of an organizational culture based on trust, kindness and healthy relationships. Indirect beneficiaries are students and the local community, by creating an empathetic and safe climate.

Prof. Eng. Laura Cepoi illustrated good practices in post-secondary education, in projects with a medical and social component implemented within the framework of the "Dimitrie Cantemir" Post-Secondary School in Tg.Mureș.

The presentation given by the undersigned illustrated the results of the involvement of the "Dimitrie Cantemir" University from Târgu Mureș in strategic Erasmus+ projects such as e-STEAM (equal opportunities in STEM education), Future Work (training for the digitalized labor market) and DISTANCE EDUCATOR – EduAdult (adult education through digital tools).

Applicative dimension: Project writing competition on the topic of combating drug use

The central element of the event was the project writing competition. Mixed teams made up of students, teachers, pupils, parents and specialized mentors (experienced project managers) developed relevant and creative proposals, built around current social themes. Each team was coordinated by a mentor and formed by educational actors with different experiences and perspectives, which gave authenticity and applicability to the projects.

Projects presented

I. *Clear Mind, Big Future* – (mentor: Laura Cepoi) – Drug prevention through educational activities and psychological counseling. Target group: middle school students. Team: students, teachers, specialists.
II. *Light in the Dark!* – (mentor: Claudia Duicu, LAKERS team) – Project focused on preventing addictions through non-formal and digital education. It included the creation of an educational platform, the organization of thematic clubs, counseling meetings for parents and an educational hub with 10 mentors. Target group: middle school students from Târgu Mureș and the surrounding areas. Duration: 24 months.
III. *Exploration vs. Addiction* – (mentor: Alina Solovăstru) – Education for healthy choices through thematic workshops, skills training and the creation of a

network of 12 ambassadors in three partner high schools. The activities focused on the prevention of risky behaviors through peer-learning and the development of own projects.

IV. *We Don't Embrace Drugs!* – (mentor: Carmen Danciu, Speranța team) – A complex project carried out over 7 months, with counseling activities, art therapy, mindfulness, visits to prisons, meetings with former users and specialists, as well as personal development clubs for students in grades IX–X. The impact aimed to reduce drug use by 20% and improve school results

V. *Say NO to drugs!* – (mentor: Cristina Murvai) – Project focused on preventing substance use through non-formal methods, educational sessions and collaborations with NGOs and local radio/TV stations.

VI. *We offer alternatives. Be independent!* – (mentor: Ioan Moldovan, Enthusiastic team) – A balanced project between artistic intervention, counseling and sports, aimed at middle school students. It included: handmade creation workshops, dramatization with actors, individual and group counseling in partnership with the County Anti-Drug Center. Target group: 30 students. Duration: 6 months.

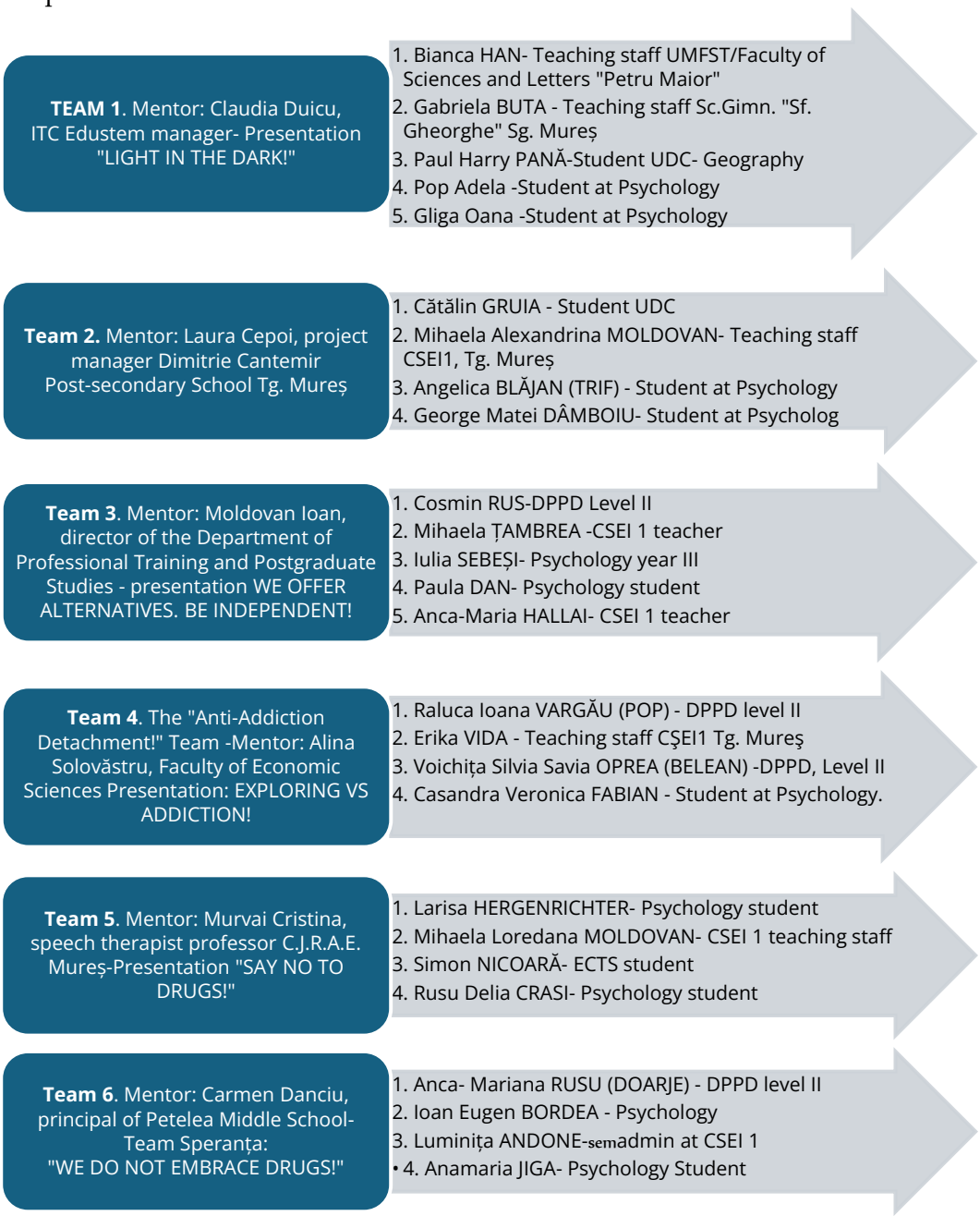
Team project comparison chart

Project	Main Theme	Target Group	Key Activities	Duration	Team Type
Clear Mind, Bright Future	Drug prevention + parents	Lower secondary students	Workshops, counseling, awareness campaigns	12 months	Students + teachers + parents
Light in the Darkness!	Nonformal education + IT	Lower secondary students	Educational hub, podcasts	24 months	LAKERS + psychologists
Exploration vs. Addiction	Adolescence & leadership	High school students	Ambassadors, peer-learning	6 months	Students + DPPD + CSEI
We Don't Embrace Drugs!	Balanced lifestyle	7th–10th grade students	Mindfulness, visits, art therapy	7 months	Speranța Team + mentors
Say NO to Drugs!	Prevention and awareness	General school students	Nonformal activities, media campaigns	6 months	Psychologists + teachers
We Offer Alternatives	Art, sports, counseling	Lower secondary students	Handmade crafts, theaters, sports, counseling	6 months	CSEI + Psychology + DPPD

The judging of the projects was ensured by an academic jury consisting of: Assoc. Prof. Dr. Sorina-Mihaela Bălan – Director of the Department of Strategies,

Programs and Projects / Faculty of Psychology, Assoc. Prof. Dr. Ramona Feier – Faculty of Medicine and Assoc. Prof. Dr. Maria Oroian – Dean of the Faculty of Geography. This team of evaluators provided a rigorous and multidisciplinary validation of the submitted proposals.

Among the proposed ideas were: the themes addressed were social inclusion, substance abuse prevention, environmental education, emotional support, and community collaboration. The ideas were innovative, interdisciplinary, and adaptable to diverse educational contexts.



The impact of collaboration between educational actors

The workshop demonstrated that successful educational projects are based on:

- an active network of partnerships between the university and schools;
- the involvement of NGOs and specialists (psychologists, counselors, trainers);
- the support of parents as educational agents;
- the opening of the economic and institutional environment to education (student internships, sponsorships, strategic partnerships).

These collaborations give coherence and realism to the educational approach, and the UDC workshop was a good platform for testing and validating this integrative vision.

Recommendations for implementation and educational policies

- Based on the experiences from the workshop, it is recommended:
- Integrating project-based education components into school curricula.
- Continuing training of teachers in writing and managing European projects;
- Stimulating collaboration between schools, universities, NGOs and economic actors.
- Creating regional educational hubs.
- Generalizing good practices at the national level.

Conclusions

The "Project Management" workshop demonstrated the efficiency of collaborative pedagogy and project-based education in stimulating authentic learning. The forms of inter-institutional collaboration presented can be replicated in other regions, and the partnerships developed show the maturity of the local educational community. The projects formulated by the participating teams cover key themes of contemporary education: addiction prevention, inclusion, digitalization, ecology, school counseling. Moreover, the integrated approach – in which the university not only trains but also facilitates the development of the community – proves to be not only necessary, but vital for a relevant and sustainable education in the 21st century.

Bibliography

1. Bălan, S. M. (2024). *The wonderful world of projects*. UDC Workshop. EduAdult Platform
2. Bălan, S. M., & ChatGPT. (2024). *Assistance in writing and structuring a scientific article.*
3. Cepoi, L. (2024). *Innovations through European projects*. UDC Workshop. Dimitrie Cantemir Post-secondary School.
4. Chira, C. (2024). *ROMUAS: Arduino and educational sustainability*. UDC Workshop.
5. Duicu, C. (2024). *Perspectives and opportunities through European programs*. UDC Workshop, ITC Edustem.
6. European Commission. (2020). *Key competences for lifelong learning*. https://erasmus-plus.ec.europa.eu/
7. Nicoară, C. A. (2024). The school of trust. UDC Workshop.
8. Erasmus+ Program (2021–2027). Program Guide. https://erasmus-plus.ec.europa.eu/
9. UDC Workshop. (2024). *Official Program – Project Management from Writing to Implementation*, May 14, 2024, "Dimitrie Cantemir" University Târgu Mureș.
10. ChatGPT (OpenAI, 2024). *Scientific writing assistance support and collaborative text editing.*

The Visual Identity in European Projects

Nicolae Lucian MOLDOVAN[1]

Abstract. *Institutions or organizations, regardless of the category and level at which they operate (local, regional, or central), are defined not only by their specific characteristics but also by how they are perceived in society as credible and viable partners in relationships with other organizations and institutions. In this context, a major importance lies in the institutional image consolidated in collective consciousness, an image characterized by continuity and consistency. The components of an institution, as well as the services they offer, must meet the expectations of citizens and the organizations with which they collaborate and interact.*

Visual identity is an important part of European projects as it helps create a cohesive and recognized image of the project among the target audience and partners. Therefore, this paper aims to analyze how the implementation of visual identity in the projects included in the study has contributed to their success and the acceptance of the educational unit as an accredited Erasmus school.

The general objective of the research aims to develop the transversal skills of teachers and students with special educational needs (SEN) through European projects such as Erasmus+. The methods used included case studies and questionnaires, applied to both students and teachers at the Special School Center for Inclusive Education No. 1 in Târgu Mureș. The questionnaire focused on evaluating the visual identity of three Erasmus+ projects carried out and completed during the 2019-2023 period, which were analyzed in this paper.

If a picture is worth a thousand words, a logo can summarize the essence of an entire project.

Keywords: *visual identity, projects, Erasmus+, Institutional Promotion, Institutional Image*

Introduction

Institutions or organizations, regardless of the category or level at which they operate (local, regional, or central), are defined not only by their specific characteristics but also by how they are perceived in society as credible and viable partners in their relationships with other organizations and institutions. In this

[1] Prof., C.S.E.I. 1 Târgu Mureș. Email: nicolas122@yahoo.com

context, a consolidated institutional image in the collective consciousness holds significant importance—an image characterized by continuity and consistency. The components of an institution, as well as the services it provides, must meet the expectations of citizens and the organizations they collaborate and interact with.

Digital technology has greatly revolutionized the means through which we communicate, the way we conduct activities, leading to the creation of cultural and artistic works, and, not least, influencing our modes of social expression—both individual and collective.

Concrete life contexts have always shaped the methods, forms, and means of artistic communication, implicitly influencing those mediated by the visual identity of an institution.

Visual identity is a crucial aspect of European projects, as it helps create a cohesive and recognizable image of the project among the target audience and partners.

Defining Visual Identity

Visual identity refers to the set of graphic and aesthetic elements used by an institution, organization, company, or project to communicate its uniqueness, values, and mission in a coherent and distinctive manner. This includes the logo, color palette, typography, graphic style, design of communication materials, and other visual elements that contribute to creating a unified and recognizable image. In the context of European projects or international initiatives, visual identity contributes to creating a unified image, fostering collaboration, and enhancing visibility among partners and target audiences.

The purpose of visual identity is to:

- Evoke emotion in the viewer.
- Bring together all important aspects of an institution's life through a concrete image that provides coherence and clarity about the institution's purpose within the community it serves.
- Detail the institution's mission to potential clients and provide key information about the services it offers.

The Role of Visual Identity

The media explosion of recent decades has transformed human society into a society of spectacle, where the real world is turned into simple images, and these

images become effective motivations for hypnotic behavior. The "spectacle," figuratively speaking, as a trend to make visible the world that is not directly perceptible, naturally finds sight as its privileged human sense. Alvin Toffler states in his famous work" Powershift" about television programs and advertisements (which are primarily images) that "nothing of this is ignored or forgotten by the viewer. Everything is filed away in the mind, forming part of the person's general bank of knowledge about the world. Thus, both good and bad, they influence the individual's knowledge of the world." (Toffler, 1995)

This statement aims to show the capacity of images, and ultimately of those who use them (companies, political parties, public institutions, individuals), to influence the attitudes and behavior of large masses of people.

The term "image" can have two different interpretations:

- On the one hand, "image" can refer to the visual stimulus that reaches the retina, allowing us to receive information about the external environment, or a mental representation with no direct equivalent, which is formed by the individual through creativity and associations.
- On the other hand, "image" can be understood in a much broader sense, as the way a certain entity (company, institution, public figure) is perceived by those inside and outside of it. In this sense, we could associate "image" with the concept of identity within an organization, especially when discussing image in the context of competitive struggle.

Thus, identity represents how a company or institution is perceived, the values it seeks to promote within the community it operates in. Typically, when talking about identity, the focus is on the distinctive elements that differentiate it from others and make it easier for potential beneficiaries to identify it. Therefore, identity and personality inherently embody the idea of uniqueness.

The role of visual identity in European projects is to create a coherent and recognized image of the project among the target audience and partners. Visual identity may include elements such as a logo, specific colors, fonts, design styles, and other graphic elements that define and represent the project.

In *The New Guide to Identity* (Olins, 1995), Wally Ollins states that the totality of the ways an organization presents itself to different groups with which it interacts can be called the identity of that institution. In this way, every organization has an identity, whether it wants to or not, whether it acts towards managing it or, on the contrary, ignores it.

There is even the concept of identity management, which encompasses all the ways in which an organization presents itself to all of its audiences. Identity can project four distinct categories of information:

- Who the organization is.
- What the organization does.
- How the organization does what it does.
- Where the organization wants to go.
- Furthermore, identity can primarily manifest in three areas:
- In the area of products and services—where appearance (design) and the performance of the product/service are important.
- In communication (how the organization explains what it does) in all its forms.
- The behaviour of all employees (which must be aligned with the spirit of the identity that is intended to be etched in the minds of customers).

Regarding the elements that make up this visual identity, the first and foremost is the symbol (often referred to as a logo) which encapsulates the identity. The power of symbols is very strong (the example of the cross being a telling one), so their importance should not be underestimated. As for the types of symbols, we can observe the existence of alphanumeric logos (combinations of numbers and/or letters, such as: OMV, Microsoft, Erasmus+), aspirational logos (which summarize an aspiration or desire), and those that emphasize the benefits offered by the respective organization. Of course, there are also symbols that lie on the border between these categories.

There are various classifications of logo types in the specialized literature, but what is important is for each organization to create that logo which best defines it, especially since a logo can suggest something to one person and something else to another, or even nothing at all, which is even worse. There are also opinions that not every logo is a symbol. From this perspective, the symbol of the cross is truly recognized and holds a universally acknowledged meaning. A logo of a corner shop may be familiar to those in the area, but completely unknown to people from other cities or, especially, other countries. Nevertheless, identity is not limited to visibility alone. Often, visual identity elements are accompanied by verbal elements, such as the name and slogan. The name should not have connotations that refer to societal taboos or offend a segment of individuals in a society. It must be unique and unifying at the same time. It should be both specific and universal in equal measure.

Like logos, slogans can be grouped into several categories following the same general lines:

- **Benefit type** (Sony - *You make it a Sony*, which implies you get the benefits of Sony, a slogan that lies at the intersection of the benefit and aspirational slogans);
- **Aspirational** (Dacia - On the right track, Panasonic - *Ideas for life*);
- **Descriptive** - repeating images through words (Bit Defender - *Secure your every bit*).

As with logos, there are also slogans that lie at the intersection of these categories. Other elements of identity might include organizational purpose, objectives, structure, personnel, and organizational culture.

Meta-analytic study

Although I am not inexperienced in "internet research", I must admit that most searches on platforms such as Google Scholar, academic.edu, Google Academic, or other dedicated research channels, returned results related to the visual identity of companies, brands, and much fewer regarding European projects. In cases where they did refer to European projects, politics predominated, with educational projects remaining behind the scenes. This leads us to a conclusion, namely that either this aspect has not been sufficiently researched and published, or the visual identity of European projects remains in the shadows, operating out of inertia, at a reduced, minimal-functional level, with corresponding efficiency.

In the following table, are summarized several works that are tangential to the chosen theme.

Year	Author(s)	Instruments	Subjects	Results
2014	Phillips, Barbara J.	Interview, collage	20	Results show significant differences between the preferences of subjects with experience in commercial graphics and those without training in the field.
2020	PETREA, Renato-Gabriel; RUS, Cristian-Mihail; POPOVICI, Ileana-Monica	Questionnaire, SPSS	Teachers employed in Physical Education and Kinetotherapy	There is a direct proportional relationship between knowledge of the faculty's strategy and the consistency of its visual identity.
2017	Rynning, Margaret	Case study	n=30, divided into groups of 3	A clear and playful graphical visualization is important in encouraging the audience to effectively share speculations via social media.
2019	Skaggs, Seven	Case study	Historical sources on the emergence and evolution of branding	Systemic iconicity can be analyzed by considering it as a loosely defined set where each graphic element (logo, typography, etc.) is treated as a member.

Year	Author(s)	Instruments	Subjects	Results
2014	Prof. Dr. Francesco E. Guida	Case study	15 groups with different themes	Each group had to develop its project, defining parameters and rules for visual identity variations to be programmed using open-source code (WWWW).
2021	Moldenæs, Turid; Pettersen, Hilde Marie	"Snowball method," genealogical research on graphic design evolution	2 universities	The study of two Norwegian universities indicates that generic design logic has spread and was found to dominate the logo style adoption process.

Research methodology

Research Hypotheses

- Hypothesis 1: Non-formal education activities promoted through specific visual identity elements contribute to the enhancement of institutional image.
- Hypothesis 2: A successful visual identity adds value to Erasmus+ projects.
- Hypothesis 3: The visibility of European projects is enhanced through original, well-made promotional materials.

Participants

The sample consists of 20 teaching staff members and 20 students with special educational needs (SEN) from the School Centre for Inclusive Education Number 1 Târgu Mureș, as follows:

- Teaching staff: 4 male respondents and 16 female respondents.
- SEN students: 10 boys and 10 girls.

The selected students participated in workshops held as part of the Erasmus+ project mobilities, with participation being voluntary.

The teaching staff participating in the study were selected from the teachers of the School Centre for Inclusive Education Number 1 in Târgu Mureș.

The following table reveals the distribution of Subjects by Age Categories and Gender:

Table 1.a

Category	Students	Teachers
Female	10	16
Male	10	4

Materials and methods

Case Study

Some authors consider the case study to be a purely qualitative research method, while others argue that it encompasses both quantitative and qualitative aspects.This method blends the two research approaches, allowing for a comprehensive description of a person's evolution by highlighting both common and unique characteristics of the case. Thus, the case study method aims to present a particular experience rather than to generalize the findings investigated.

Using Questionnaires in Research

Questionnaires allow us to capture how subjects perceive the dynamics and impact of the subject matter. This method provides supplementary data and insights into how students perceive the visual identity of the projects, as well as how they understand the projects through the visual identity elements presented to them. The questionnaire was designed to be applied comparatively, as feedback on the visual identity of the analyzed projects, both to teachers and students involved in activities following Erasmus+ mobilities, within the Special Education Center No. 1 in Târgu Mureș. This questionnaire aims to evaluate the visual identity of the three Erasmus+ projects conducted and completed during the 2019–2023 period.

Description of the Research Procedure

The current research was conducted as follows:

1. Conducting case studies;
2. Developing a questionnaire regarding the impact and relevance of the visual identity of Erasmus+ projects;
3. Administering the questionnaire to students and teachers involved in the research;
4. Analyzing the data obtained.

Case study I. Erasmus+ Project "BALANCE – A Better School for a Better Life"-

2018-1-RO01-KA101-047975 – September 2018 to November 2019

The Erasmus+ project "BALANCE – A Better School for a Better Life" aimed to explore, develop, and implement a comprehensive set of measures—professional competencies, curricular content, managerial strategies, innovative methods, tools, and techniques—that ensure an effective approach to school and social inclusion for all individuals, aligned with European values and standards.

Objective

To develop an action plan for preventing violence, managing conflicts, and optimizing the school and social inclusion of students with special educational needs (SEN).

As a first step following the approval of the project, we proceeded to create the project's visual identity (Fig. 1.b), blending all the elements mentioned above into a single, suggestive image. Together with the project team, we analyzed the key concepts, concluding that a representative image for the project should simultaneously convey balance, school, a better life, safety, and stability.

Thus, we decided to use the image of a tree with deep roots in the ground, symbolizing the socio-familial stability that our students so greatly need. The tree's branches were replaced with two palms, representing the protection and safety every child requires. One palm shelters a school, featuring the image of the Center for Inclusive Education No. 1, Târgu Mureș, while the other supports a group of children playing freely. The palms are in perfect balance, thereby illustrating the goal of this first Erasmus+ project, in which our school participated.

Fig. 1.b.

Fig. 1.c.

To ensure easy interpretation of the above symbol, we incorporated four suggestive words: *BALANCE-BETTER-SCHOOL-LIFE*, which spatially summarize the slogan and title of this project, *BALANCE, A BETTER SCHOOL for a BETTER LIFE*. In writing the slogan, we used italicized characters with a handwritten, rounded style, symbolizing warmth and security.

As the next step, after establishing the linguistic identity and outlining the visual identity, we created a banner. This was designed for both physical use—printed on vinyl to be displayed on the school, marking the institution as an Erasmus+ partner—and digital use, for dissemination through websites and social media.

According to the requirements of the Visual Identity Manual for the European Erasmus+ Program, the Erasmus+ logo was placed in the top left corner on a white

background, while the school's logo appeared in the top right corner. This placement was consistent across all visual elements and documents related to the project. As shown below (Fig. 1.c.), alongside the Erasmus+ logo, the Center for Inclusive Education logo, and the project logo, the banner includes the title, implementation period, target locations, project code, and the names of the three mobilities that make up the project. Each mobility is accompanied by a representative image, all centered around the project logo, *Balance*.

To display the essential data of the project, as well as its visual identity during dissemination activities, we designed a mobile version of the banner: a roll-up. The roll-up is a portable display and presentation system designed for easy transport, assembly, and disassembly, making it highly practical.

This solution allowed for convenient transportation and display in any free space of 20x80 cm on the floor. The roll-up contains all the elements included in the banner, scaled down proportionally and adapted to the new vertical orientation required by the roll-up format (Fig. 1.d.). After establishing and finalizing the materials described above, we designed a customized cover for notebooks (Fig. 1.e.) and personalized pens featuring the Erasmus+ program logo. Additionally, within the framework of this project, a brochure was proposed and created to present the School Center for Inclusive Education No. 1 in Târgu Mureș. This brochure was used to promote the school's image during dissemination activities following the three mobility projects (Fig. 1.f.).

Fig.1.d

Fig. 1.e.

Case study

Fig.1.f.

Case study II. Erasmus+ Project: "Learning and Working Together for New Horizons"-Project Code: 2019-1-RO01-KA105-061528
Implementation Period: 30.09.2019 – 30.03.2022

Mobility: "TOGETHER WE SUCCEED," Sovata, 20–27 September 2021

This youth exchange enabled a group of 16 young participants (8 youth from the School Center for Inclusive Education No. 1 in Târgu Mureș, Romania, and 8 youth from the Baptist Technical High School and Vocational School "Diószegi Sámuel" in Debrecen, Hungary) to meet for 7 days and participate in a non-formal education learning program. Activities included guided tours, workshops, exercises, role-playing games, outdoor activities, and more (Fig. 1.g.).

Fig 1.g.

Fig 1.h.

The Interpretation of the Hot Air Balloon in Visual Identity

When the hot air balloon is used in visual identity, the message it conveys can vary depending on the other graphic elements associated with it. For example, combining the balloon with a globe can emphasize the concept of travel and world exploration. In this case, the visual identity can suggest that the organization promotes knowledge and the discovery of new horizons. Based on this idea, the motto/slogan "Together for New Horizons" was chosen and inscribed on the balloon.Building on this, the two logo variants created were discussed within the project team, and ultimately, the logo on the left (Fig. 1.h.) was selected as the central element of the project's visual identity.

The existence of the project was also made known to the interested public through our school's webpage, hosted on the Mureș County Council's website (Fig. 1.i.). After the mobility activities took place, dissemination efforts were carried out both at the level of the Mureș County School Inspectorate (ISJ Mureș) and through pedagogical circles at county and school levels. Additionally, the project was featured in written and audiovisual media.

Case study III. The Erasmus+ Project "My Chance to Speak Correctly"

2019-1-RO01-KA101-062007

The project *"My Chance to Speak Correctly"* focused on the inclusion of students with special educational needs (students with various speech disorders from CSEI No. 1 Târgu Mureș).

The mobilities aimed to improve the competencies of teaching staff, primarily speech therapy specialists, in working with students who have various speech disorders, as well as moderate or severe intellectual disabilities, to ensure their social inclusion. The visibility materials created and displayed for this project, its dissemination online, the project's Facebook page, the school's Facebook page, and its presentation in the media (newspapers and television) contributed to raising awareness about European projects and increasing interest in them.

A brochure titled *"Playful and Creative Approaches in Speech Therapy Intervention"* was developed. It includes games that were learned, examples of best practices from across Europe, innovative methods such as Yoga in speech therapy, advice for specialists and parents of children with selective mutism, and applications that can be used in the therapy of speech disorders. The target audience includes teaching staff, speech therapists in interschool offices, and parents of children with speech disorders.

Regarding the steps followed in creating the elements of the project's visual identity, suggestive graphic elements were identified. Using Photoshop as editing tool, we managed to create a logo, followed by a banner and a roll-up, based on the previously practiced model from other projects described above. Naturally, we developed several logo variants (Fig. 1.k.), from which the project team selected the one that was the most relevant, attractive, and simultaneously simple.

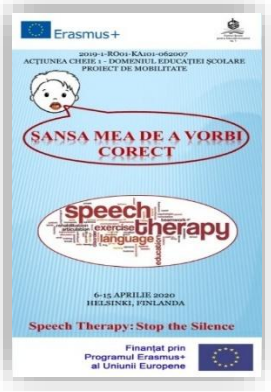
Fig. 1.k.

The Questionnaire regarding the impact and relevance of the visual identity of erasmus projects was designed to be applied comparatively, serving as feedback on the visual identity of the analyzed projects. It targeted both teaching staff and students involved in activities conducted following Erasmus+ mobilities at the School Center for Inclusive Education No. 1, Târgu Mureș. This questionnaire aimed to evaluate the visual identity of the three Erasmus+ projects carried out and completed during the 2019–2023 period.

1. Assign a score from 1 to 3, in order of preference, to each banner, where 3 is the maximum score.
   a) ☐ b) ☐ c) ☐

Banner (a)

Banner (b)



Banner (c)

2. From the point of view of the chromatic effect, write down the three banners, from 1 to 3, where 3 represents the maximum score.

Logo a)

Logo (b)

Logo (c)

3. Note, from 1 to 3, the clarity, representativeness and suggestiveness of the logos for the project titles, where 3 represents the maximum score:
   a) ☐ b) ☐ c) ☐

4. Give a score between 1 and 3, where 3 is the maximum score, for the spatial arrangement of the component elements of the logo:
   a) ☐ b) ☐ c) ☐

5. Rate with a score between 1 and 3, where 3 represents the maximum score, the extent to which the slogan in the logo enhances its meaning:
   a) ☐ b) ☐ c) ☐

6. Note, from 1 to 3, where 3 represents the maximum score, the extent to which the background used for the banner enhances the meaning of the logo:
   a) ☐ b) ☐ c) ☐

Research results and their interpretation

This research was born from the desire to reveal the impact that European projects have on the life of the school community to which they belong and to see the visual impact that the materials promoting their projects have on the people concerned.

Question 1 of the questionnaire involved the analysis and ranking of the projects according to the visual aspect of the banner. Wanting to achieve a hierarchy in terms of visual identities among the projects, we obtained the following results in order of preference: The teachers rated as follows: on the first place with identical scores the projects *"Balance - A better school for a better life"* and *"Together for new Horizons"*; out of 20 people, 9 awarded 3 points to the two projects, 7 people awarded 2 points and 1 point was awarded by 4 people, and in second place is the *"Stop de Silence" project (Fig. 3.a.)*

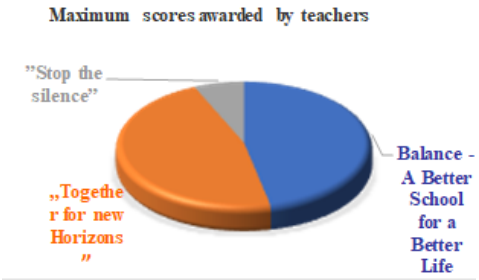


Fig. 3.a. Graph of the hierarchy of the projects from the teachers

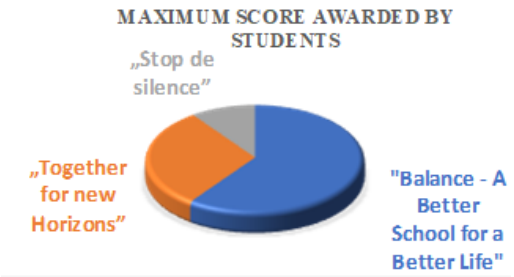


Fig.3. b. Graph of the hierarchy of the projects from the students

Within the project "*Balance - A better school for a better life*" 12 students awarded 3 points, 6 students awarded 2 points and 2 awarded one point. The scores awarded to the "*Together for new Horizons*" project are as follows: 6 people award 3 points, 8 people award 2 points and 6 people award one point. The "*Stop de Silence"* project obtains the following scores: 2 people awarded 3 points, 6 people awarded 2 points and 12 people awarded one point. By making a hierarchy we can see the data in the following graph (Fig.3.b)

Question 2 of the questionnaire. An important component in making a banner, but not only, is the chromatic effect it has on the viewer. We asked our respondents to make a ranking in this regard and the distribution of the answers can be seen in the graph below (Fig.3.c.). From the data obtained, it appears that the strongest chromatic impact is the banner of the "*Together for New Horisons" project,* which visually attracts the viewer due to the blue color of the sky, suggesting rest and offering a calming effect, but at the same time the hot air balloon that makes you think of something new, unique, an opening to exploring new horizons, in front of the viewer.

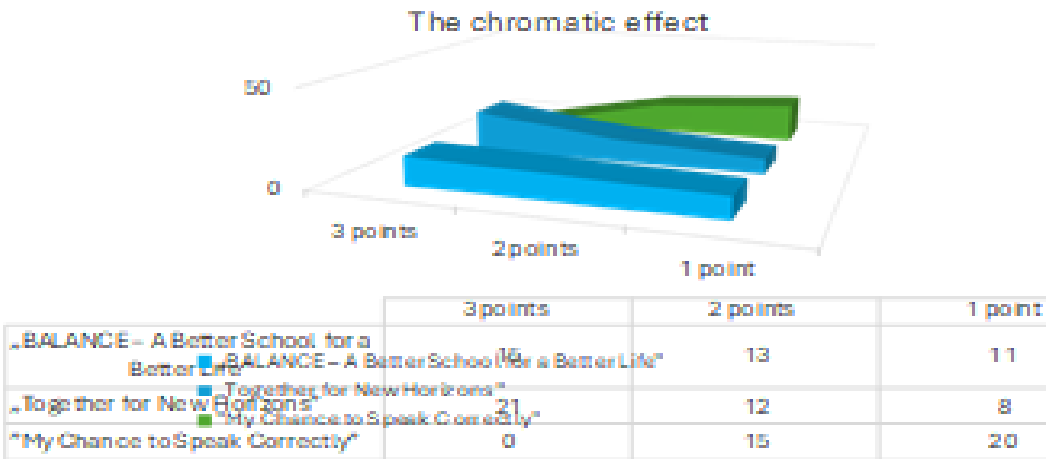


Fig. 3.c. Graph regarding question 2 of the questionnaire

Question 3 of the questionnaire. Regarding the clarity, representativeness, and suggestiveness of the logos for the project titles, it can be observed that the most representative logo is rated as belonging to the "Balance" project, achieving a total score of 99 points. It is followed by the "Together for New Horizons" project, which scored 77 points, while the "My Chance to Speak Correctly" project received 64 points. The evaluation was conducted by students involved in the projects (Fig. 3.d.).

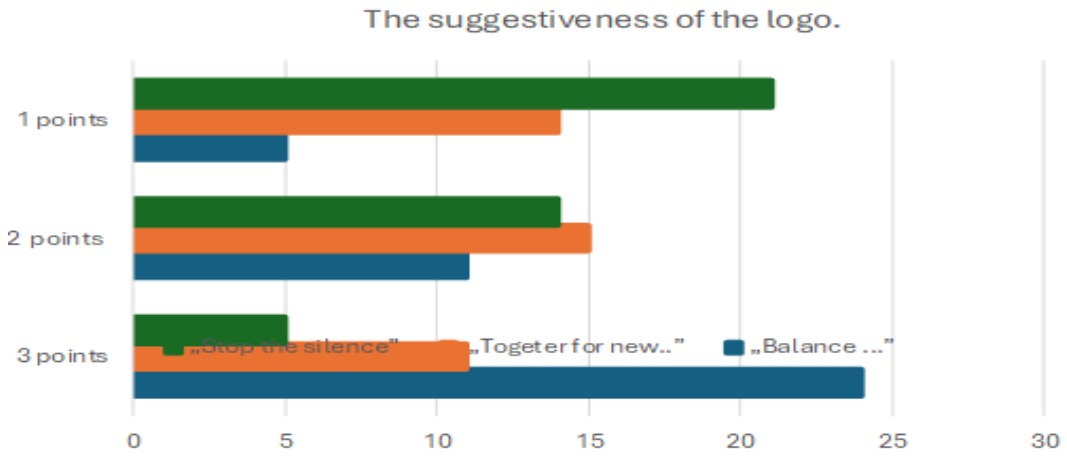


Fig. 3.d. Graph showing the clarity, representativeness, and suggestiveness of the logos.

Question 4 of the questionnaire. The logo of the "Balance - A Better School for a Better Life" project is the highest rated in terms of the spatial arrangement of its elements. It features the image of a tree with deep roots firmly planted in the ground, symbolizing the socio-family stability that our students so desperately need. Instead of branches, the tree has two palms, symbolizing the protection and safety essential for any child. The palms are in perfect balance, thus illustrating the intended goal of this first Erasmus+ project, in which our school participated (Fig. 3.e.).

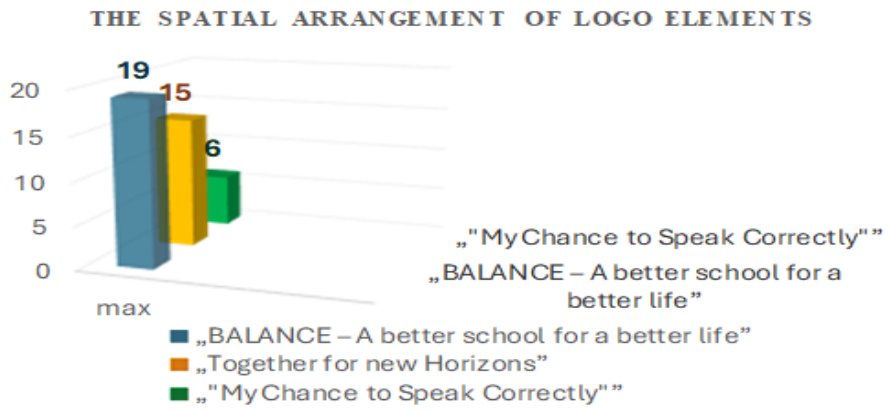


Fig. 3.e. Graph representing the spatial arrangement of the logo elements

Question 5 of the questionnaire. Following the collection of data for the fifth question of the questionnaire, namely: "Rate with a score between 1 and 3, where 3 represents the maximum score, the extent to which the slogan in the logo enhances its significance," the following data were obtained:

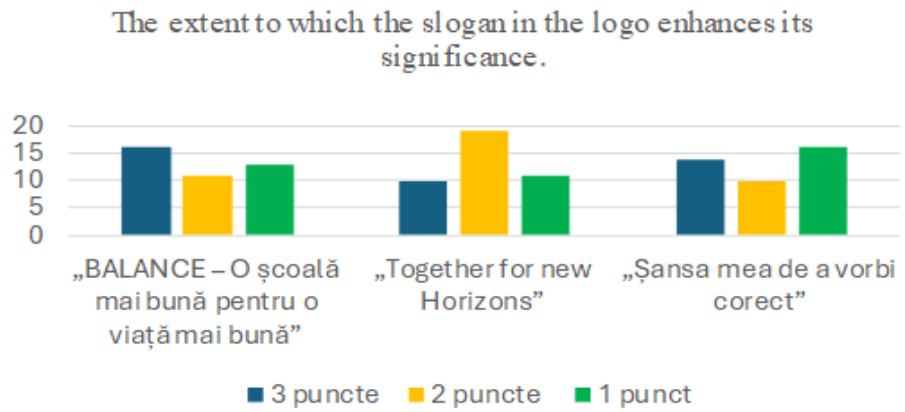


Fig. 3.f. - Graph representing the extent to which the slogan in the logo enhances its significance

Question 6 of the questionnaire. "…the background used in the banner and whether it enhances the significance of the logo," the 40 respondents provided the following scores: Thus, the project **"BALANCE – A Better School for a Better Life"** achieved a total score of 89 points, ranking first in the respondents' preferences. Similarly, the project **"Together for New Horizons"** received a score of 87 points, placing it in second place, while **"My Chance to Speak Correctly"** obtained a final score of 64 points (Fig. 3.g.).

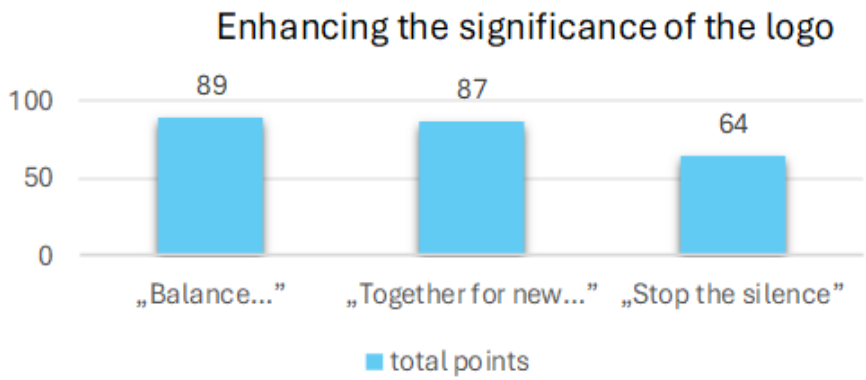


Fig. 3.g. - Graph representing the extent to which the banner's background enhances the significance of the logo.

Conclusions and Practical Implications of the Research

This study aimed to analyze the visual identity of European projects, on the one hand, and, on the other hand, to examine how the visual identity of projects in which the school is involved can promote the institutional image.

C.1. Following the case study, we can conclude that Hypothesis 1, which posited that non-formal education activities promoted through specific visual identity elements contribute to the promotion of the institutional image, is confirmed. This is because the school's involvement in activities proposed by Erasmus+ projects has fostered national and international partnerships and cooperation with numerous educational institutions as well as other organizations and representatives of local and county authorities. The workshops within the "Together for New Horizons" project, hosted by our school, facilitated the dissemination of best practices among students and teachers from Hungary. At the same time, they benefited teachers in Mureș County through the dissemination of all projects during institutional and county-level pedagogical meetings. Additionally, by publishing brochures, curricular development materials, and books on the Open Educational Resources platform, these results have reached even the national level.

C.2. The questionnaire administered confirmed, from the perspective of participants, both students and teachers, the efficiency and representativeness of the visual identities we created for the three projects, thus validating Hypothesis 2. Numerous press articles and the work materials produced as a result of these projects, all bearing the Erasmus+ logo, have, in our opinion, added value to this European program by disseminating its significance and the methods of applying for Erasmus mobility opportunities.

C.3. Notebooks and specialized articles were published to inform all interested parties about the educational activities conducted as a result of project mobilities. These serve as examples of best practices and visual identity elements that have added value to the school and the aforementioned Erasmus projects. Open Educational Resources (OER) publications resulting from Erasmus projects, such as *"Playful and Creative Approaches in Speech Therapy Interventions"*, the book *"Inclusive Education - Current Issues and Perspectives"*, or the yearbook *"CȘEI: 50 Special Years"*, thus represent materials with real educational value, available to everyone as Open Educational Resources.

At the same time, we have done everything manually, using only human imagination and experience, whereas the use of AI resources would have

accelerated the creative process while keeping the design aligned with current digital trends.AI can analyze user data to tailor visual content, ensuring it resonates with diverse audiences and adapts to individual preferences. AI-powered design tools streamline the creation process, from generating prototypes to optimizing layouts. This not only speeds up production but also maintains consistency and quality across various platforms. AI can analyze brand usage across digital channels, ensuring adherence to visual guidelines and identifying any inconsistencies. AI algorithms can also forecast trends in visual communication, guiding our design decisions proactively and keeping our brand relevant in a rapidly evolving landscape. By strategically integrating AI into our visual identity, we can unlock new creative possibilities, improve operational efficiency, and elevate our brand's impact in the digital realm.

Practical Implications

All these conclusions emphasize the special attention that should be given to the development and promotion of visual identity elements for educational projects carried out within the school environment. They highlight the importance and impact of visual identity in the development of various aspects of an institution's evolution. In this context, based on the experience gained in this area of action, I would like to mention the activation of the important creative resources available at our school. These resources are of significant interest and involvement in the development of the visual identity for the Erasmus+ accreditation obtained this school year by the educational institution where I carry out my work. The Erasmus+ accreditation was obtained for the period 2023–2027, and as a result, the visual identity elements created will have an extended impact both over time and in space, due to the four European projects that the accreditation involves.

References

1. Bălan & ALL, S. (2021). *Educația Incluzivă - actualități și perspective.* Cluj Napoca: Risoprint.
2. Burmann, C., & Riley, N.-M. (2017). *Identity-Based Brand Management.* Springer.
3. Olins, W. (1995). *The New Guide to Identity: How to Create and Sustain Change Through Managing Identity.* (Gower, Ed.) London. doi: https://doi.org/10.4324/9781315238128
4. Toffler, A. (1995). *Powershift.* (M. Columbeanu, Trad.) Oradea, Bihor: Antet. Preluat de pe https://archive.org/details/toffler-alvin-puterea-in-miscare-scan-mmxi/page/2/mode/2up

Enhancing Physical Activity for People with Diabetes through Augmented Reality: a Digital Innovation under the Dart Project

Rodica MOLNAR[1], Florentina HUERTAS[2], Despoina VALLIDIS[3], Magda GRAVINA[4], Antonio Jose Pereira RAMOS[5], Iris SPANJOL[6], Constantinos KARAHALIOS[7]

Abstract. *The DART (Diabetes Augmented Reality Training) project, co-funded by the Erasmus+ Programme of the European Union, represents an innovative effort to support individuals with diabetes by integrating physical activity with augmented reality (AR) technology. The DART mobile application, available on Google Play and App Store, provides interactive exercise guidance via a virtual trainer. Users can watch and perform specially designed routines that promote an active lifestyle tailored for diabetic patients. This paper explores the Romanian implementation of the project, coordinated by ASCOTID Mureș, and discusses the broader implications of digital and AI-assisted health training in post-modern societies. The study emphasizes the impact of digitalization in patient empowerment and health education, positioning the DART project within the larger European effort to transform healthcare through technology.*

Keywords: *digital health, diabetes, augmented reality, physical activity, Erasmus+, patient education, ASCOTID, AI in healthcare*

Introduction

The continuous rise in diabetes prevalence across Europe has prompted the need for innovative solutions to enhance the quality of life and self-management

[1] Asociaţia Copiilor și Tinerilor Diabetici Mureş, Romania. Email; contact@ascotid.ro
[2] Fundacion Universidad Catolica De Valencia San Vicente, Spain.
[3] Meandros Lmd, Athens, Greece.
[4] Centro Universitario Sportivo – CUS Padova, Italy.
[5] Associação De Futebol De Bragança, Portugal.
[6] Zajednica Sportskih Udruga Grada Rijeke "Riječki Sportski Savez", Croatia.
[7] Tool Ltd., Greece.

skills of affected individuals. Among the most promising strategies is the integration of digital technologies, such as mobile health (mHealth), augmented reality (AR), and artificial intelligence (AI), to provide personalized and engaging health education. The DART project (https://dartproject.eu/) stands at the intersection of these trends, aiming to empower diabetic patients through digital training tools.

Overview of the DART Project

The DART project is a transnational initiative funded under the Erasmus+ Programme, involving academic, clinical, and civil society partners from several European countries. The Romanian component is coordinated by ASCOTID Mureș (Association for Children and Young People with Diabetes), which plays a central role in the national pilot program.

The project has three main goals:

- Promote regular physical activity among people with diabetes.
- Provide accessible digital tools for exercise training via AR.
- Collect data on user experience and health indicators to guide future innovations.

Methodology

a. Consortium and roles

DART consortium consists of 7 institutions experienced in all related fields (education, sport, medicine, technology) from 6 countries.

- **Coordinator (P1): FUNDACION UNIVERSIDAD CATOLICA DE VALENCIA SAN VICENTE MARTIR (CATHOLIC UNIVERSITY OF VALENCIA), ES** – project coordinator, sport science expertise, behavior change coaching. The Faculty of Physical Activity and Sports Sciences (FCCAFD) of the Catholic University of Valencia is the coordinator of DART project. The Faculty contributes to the SAFD (the Physical Activity and Sports Service) with numerous athletes and users.
- **P2- MAINDROS EPE (MEANDROS LTD), EL**. MEANDROS LTD. is an organization from Greece, with a long history of creating educational materials for students of all ages. Meandros publishes books and digital content and has been part of many successful European projects, such as Socrates, Lifelong Learning and Erasmus+ as either a coordinator or partner. The institution works with schools and universities all over Greece and

organizes educational seminars, events, and lectures for students, athletes, and professionals.

- **P3- CENTRO UNIVERSITARIO SPORTIVO – CUS PADOVA, IT** – Associazione Sportiva Dilettantistica, IT. CUS Padova is the Sport Association of the University of Padova. Since 1946, CUS Padova has been promoting sport activities as essential cultural and educational means for students, trainers and university staff to develop transversal and integrated skills and CUS has been supporting the practice and the diffusion of physical education as part of amateur sports.
- **P4- ZAJEDNICA SPORTSKIH UDRUGA GRADA RIJEKE "RIJEČKI SPORTSKI SAVEZ", CR** (Rijeka Sport's Association)/RSS. Rijeka Sport's Association (RSS) is allying all sporting clubs within the City of Rijeka, and in accordance with art.48 of Sports Act, is the promoter of the Program of public sports co-funded by the City of Rijeka
- **P5- Associação de Futebol de Bragança (Bragança Football Association), PT**. The Associação de Futebol de Bragança (Bragança Football Association) is a sports organization responsible for the management and development of Football, Futsal and Beach Soccer in the Northeast region of Portugal.
- **P6- Asociaţia Copiilor si Tinerilor Diabetici Mureş (Association for Children and Youth with Diabetes -Mureş)- ASCOTID, RO.** The Association was founded in 2006 by a group of parents aiming to bring great changes in the lives of families with children and young people diagnosed with diabetes, to advocate and fight for their rights, to have access at right treatments and to improve the quality of life of the patients and of their families, and has a humanitarian and charitable character.ASCOTID-Mureș (Romania) – partner, patient co-design workshops, field testing.
- **P7- TOOL LTD., EL.** TOOL is an IT company from Athens, Greece offering high technology services since 2001 by providing to its customers with modern and complete solutions for commercial entrepreneurship, communication, education, information and advertising. TOOL creates added value by designing innovative products, building communities and communicating the experience of each brand, with proven results.

b. Application design

- **Functional modules:**
  - Exercise videos by virtual coach (AR overlays to guide posture/form)
  - Adaptive difficulty levels (beginner–intermediate)
  - Educational snippets: glucose-control tips, diabetic nutrition, safety precautions
  - Activity logging + gamification (badges, progress indicators)

- **Technology stack**:
  - Mobile native apps (Android/iOS); AR features via device camera and overlays
  - SQLite local storage, optionally connected to secure cloud backend
  - Multilanguage support: EN, RO, PT, IT, ES
- **User-centered techniques**:
  - Pilot focus group: 20 participants with Type 1 & 2 diabetes
  - Pre- and post-implementation questionnaires (self-efficacy, usability, physical activity frequency)
  - Usability scoring: System Usability Scale (SUS)

c. Data collection & analysis

- Metrics: app engagement rate (logins, completed sessions), user retention, average daily exercise minutes
- Qualitative feedback: focus group observations, open-ended interviews
- Statistics: pre-post comparison (Wilcoxon signed-rank test), SUS average score

The DART Application: Features and Use

The DART mobile application, downloadable from Google Play and App Store, is designed for intuitive use. It features:

- An augmented reality virtual coach offering live guidance.
- Video exercises adapted for diabetic users.
- Personalized instructions and motivational feedback.

Users can log into the app, follow exercise routines daily or weekly, and access additional resources via the dedicated Moodle platform (https://moodle.dartproject.eu/).

Romanian Pilot Implementation by ASCOTID

In Romania, ASCOTID Mureș facilitated the testing and adaptation of the app with real patients. Workshops, online tutorials, and focus group discussions were held with participants to gather feedback on usability, engagement, and perceived benefits.

The following table summarizes key findings from the Romanian pilot study:

Table 1: Summary of Key Results – DART Romanian Pilot

Metric	Value
Average SUS Score	82
Avg. Weekly Sessions (Users)	3.5 sessions
Retention After 4 Weeks	85%
Increase in Motivation to Exercise	60%
User Satisfaction (Very Satisfied)	78%

Preliminary Results

- Usability: average SUS score = 82 ("excellent")
- Engagement: 85% of pilot users completed at least 3 sessions/week within 4-week period
- Self-management impact:
  - 60% increase in reported motivation to exercise
  - Improved knowledge about safe exercise practices and glucose monitoring
- Feedback highlights:
  - Positive on virtual coach realism and AR visual cues
  - Suggestions: add audio instructions, extend video catalog, integrate dietary trackers

Podcast Series – A Complementary Innovation for Health Education

As part of its innovative strategy, the DART project has launched a series of 15 podcasts that complement the educational materials offered through the mobile application and Moodle platform. These audio-visual resources aim to increase accessibility, provide expert insights, and share inspiring personal stories, thereby humanizing diabetes care and fostering empathy, motivation, and social learning.

The following table lists all podcasts with direct access links:

Table 2. Podcast Series: Titles, Experts, and Access Links

No.	Theme	Title	YouTube Link	Moodle Link
1	Living with Diabetes Type 1	Tips and Know-How (Dr Cristina Ferrer Abero & Isabel Beltran Gil)	Watch	Moodle
2	Living with Diabetes Type 2	Tips and Know-How (Dr Angeliki Gouli)	Watch	Moodle

No.	Theme	Title	YouTube Link	Moodle Link
3	Living with Diabetes Type 1	Expert's Opinion (Dr Sanja Pavić)	Watch	Moodle
4	Living with Diabetes Type 2	Expert's Opinion (Dr Rui Ramos)	Watch	Moodle
5	Living with Types 1 & 2	Medical Advice (Dr Riccardo Maria Pollis)	Watch	Moodle
6	Type 1 & Physical Education	Impact of Exercise (Dr Laura Elvira Macagno & Marina Conesa Molina)	Watch	Moodle
7	Type 2 & Physical Education	Value of Exercise in Prevention (Dr Marco Vecchiato)	Watch	Moodle
8	Type 1 & Physical Education	Precautions (Coach Jorge Daniel Martins Branquinho)	Watch	Moodle
9	Type 2 & Physical Education	Precautions (Dr Sanja Pavić)	Watch	Moodle
10	Diabetic Food	For Type 1 (Dr Angeliki Gouli)	Watch	Moodle
11	Diabetic Food	For Type 2 (Dr Angeliki Gouli)	Watch	Moodle
12	Success Stories	Patient 1 – Ionuț Bârsan	Watch	Moodle
13	Success Stories	Patient 2 – Dalea Medve Mihaela	Watch	Moodle
14	Success Stories	Patient 3 – David Petrișor	Watch	Moodle
15	Success Stories	Patient 4 – Daboczi Matyas	Watch	Moodle

The podcast series includes: Interviews with medical doctors, coaches, and researchers; Real-life success stories of individuals living with Type 1 and Type 2 diabetes; Discussions about nutrition, physical activity, and psychological support

Each podcast is available both on YouTube and directly through the DART Moodle Platform, ensuring broad accessibility. The podcasts can be used as:

- Complementary content in professional training for educators
- Didactic material for workshops or group discussions
- Motivational tools for diabetic patients and their families.

These podcasts offer real voices, practical advice, and emotional resonance—key components in effective health communication and behavioral change. They serve as a bridge between theory and lived experience, helping professionals and families better understand the complexity of managing diabetes in active life.

Implications for Digitalization and Post-Modern Healthcare

The DART project aligns with broader trends in digital transformation within healthcare. By leveraging AR and mobile technology, it bridges the gap between medical recommendations and patient behavior. Furthermore, its accessibility across Android and iOS platforms ensures inclusivity. In the context of AI-driven personalization and gamification, DART also opens doors to further developments in tele-rehabilitation and virtual coaching for chronic conditions.

Challenges and Opportunities through European Projects

European funding frameworks, such as Erasmus+, offer unique platforms to experiment and scale up innovative health interventions. DART exemplifies this potential, as the collaboration among academic institutions, NGOs, and IT developers fosters sustainable and impactful outcomes. Still, digital inequality, privacy regulations, and varying healthcare policies remain challenges.

- **Benefits**: Accessible exercise support, scalable across European regions, improved digital competencies.
- **Challenges**: AR usability on older phones, bandwidth or device limitations, ongoing content updates.
- **Opportunities**: Future integration with wearables (glucose monitors, pedometer), AI-based adaptive training, expansion to other chronic conditions.

Conclusions

The DART project represents a significant step forward in providing physical education teachers, trainers, parents, and individuals with diabetes with evidence-based tools and knowledge for enhancing health outcomes and promoting inclusion through physical activity. The integration of the Moodle-based e-Platform, combined with video interviews, success stories, expert advice, and a multilingual promotional website, ensures both accessibility and depth of content.

Moreover, the added value of this initiative lies not only in the academic content and practical guidance it offers but also in the attention given to data protection and digital responsibility. With the present notice, we would like to inform you about the terms and conditions regarding our personal data collection and processing, carried out by the DART PARTNERSHIP, which includes the following institutions:

- FUNDACION UNIVERSIDAD CATOLICA DE VALENCIA SAN VICENTE,
- MAIANDROS EPE,
- CENTRO UNIVERSITARIO SPORTIVO – CUSPADOVA,
- ASSOCIAÇÃO DE FUTEBOL DE BRAGANÇA,
- ZAJEDNICA SPORTSKIH UDRUGA GRADA RIJEKE "RIJEČKI SPORTSKI SAVEZ",
- ASOCIAŢIA COPIILOR SI TINERILOR DIABETICI MUREŞ (ASCATID),
- TOOL LTD.

These entities are the owners of the DART application (available in Spanish, Greek, Italian, Portuguese, Croatian, Romanian, and English) and are responsible for the collection and control of personal data through this platform (hereinafter referred to as "DART"). DART has implemented all necessary measures to ensure a high level of protection and security for the DART application, adhering to internationally recognized business best practices.

Acknowledgements. Supported by **Erasmus+ Sport** and DART consortium. Thanks to patients, trainers, and technical teams across Romania, Portugal, Italy, Spain, Greece, and Croatia.

References

1. DART Project Consortium. (2025). *DART – Diabetes Augmented Reality Training*. Official project website. Retrieved from https://dartproject.eu/
2. DART Project Consortium. (2025). *DART Moodle Platform*. Retrieved from https://moodle.dartproject.eu/
3. Envy Softworks. (2025). *DART App – Diabetes AR Training* [Mobile application]. Google Play. Retrieved from https://play.google.com/store/apps/details?id=com.envysoftworks.dart
4. Envy Softworks. (2025). *DART App – Diabetes AR Training* [Mobile application]. App Store. Retrieved from https://apps.apple.com/gr/app/dart-diabetes-ar-training/id6740289408?l=en
5. DART Project Consortium. (2025). *Podcast Series – Living with Diabetes*. Retrieved from https://dartproject.eu/podcast-series/
6. ASCOTID Mureș. (2025). *Patients' Stories and Testimonies*. Retrieved from https://moodle.dartproject.eu/course/view.php?id=213
7. European Commission. (2024). *Erasmus+ Projects for Health Promotion and Digital Innovation*. Retrieved from https://erasmus-plus.ec.europa.eu/
8. DART Project. (n.d.). *Living with Diabetes Type 1 – Tips and Know-How* [Podcast]. Interview with Dr Cristina Ferrer Abero and Isabel Beltran Gil. https://youtu.be/sWAv-o4IwIE | https://moodle.dartproject.eu/course/section.php?id=347
9. DART Project. (n.d.). *Living with Diabetes Type 2 – Tips and Know-How* [Podcast]. Interview with Dr Angeliki Gouli. https://youtu.be/zoxQAgB4GzU | https://moodle.dartproject.eu/course/section.php?id=347
10. DART Project. (n.d.). *Living with Diabetes Type 1 – Expert's Opinion* [Podcast]. Interview with Dr. Sanja Pavić, MD. https://youtu.be/E6AqpC0P6r0 | https://moodle.dartproject.eu/course/section.php?id=334
11. DART Project. (n.d.). *Living with Diabetes Type 2 – Expert's Opinion* [Podcast]. Interview with Dr Rui Ramos. https://youtu.be/WCtyoplZVZM | https://moodle.dartproject.eu/course/section.php?id=335

12. DART Project. (n.d.). *Living with Diabetes Types 1 and 2 – Medical Doctor's Advices* [Podcast]. Interview with Dr Riccardo Maria Pollis, diabetologist. https://youtu.be/D8dvCYsWDcY | https://moodle.dartproject.eu/course/section.php?id=336
13. DART Project. (n.d.). *Diabetes Type 1 and Physical Education – Impact of Exercise on Diabetes Outcomes* [Podcast]. Interview with Dr Laura Elvira Macagno and Marina Conesa Molina. https://youtu.be/DlK8Qx3bO7Q | https://moodle.dartproject.eu/course/section.php?id=337
14. DART Project. (n.d.). *Diabetes Type 2 and Physical Education – The Value of Exercise in Prevention* [Podcast]. Interview with Dr Marco Vecchiato. https://youtu.be/T67bBUnsAJ0 | https://moodle.dartproject.eu/course/section.php?id=338
15. DART Project. (n.d.). *Diabetes Type 1 and Physical Education – Precautions* [Podcast]. Interview with Jorge Daniel Martins Branquinho. https://youtu.be/NeLEv_83zCc | https://moodle.dartproject.eu/course/section.php?id=339
16. DART Project. (n.d.). *Diabetes Type 2 and Physical Education – Precautions* [Podcast]. Interview with Dr. Sanja Pavić, MD. https://youtu.be/gA-2Khi0QHY | https://moodle.dartproject.eu/course/section.php?id=340
17. DART Project. (n.d.). *Diabetic Food for Diabetes Type 1* [Podcast]. Interview with Dr Angeliki Gouli. https://youtu.be/KlxyCHPbqn0 | https://moodle.dartproject.eu/course/section.php?id=341
18. DART Project. (n.d.). *Diabetic Food for Diabetes Type 2* [Podcast]. Interview with Dr Angeliki Gouli. https://youtu.be/iNmt_ikXYPY | https://moodle.dartproject.eu/course/section.php?id=342
19. DART Project. (n.d.). *Success Story – Patient 1* [Podcast]. Interview with Ionuț Bârsan. https://youtu.be/EfiXaUcHzwQ | https://moodle.dartproject.eu/course/section.php?id=343
20. DART Project. (n.d.). *Success Story – Patient 2* [Podcast]. Interview with Dalea Medve Mihaela. https://youtu.be/42WzJUR4l1A | https://moodle.dartproject.eu/course/section.php?id=344
21. DART Project. (n.d.). *Success Story – Patient 3* [Podcast]. Interview with David Petrisor. https://youtu.be/0yTAuG–jiE | https://moodle.dartproject.eu/course/section.php?id=345
22. DART Project. (n.d.). *Success Story – Patient 4* [Podcast]. Interview with Daboczi Matyas. https://youtu.be/xCXLBLDQgP4 | https://moodle.dartproject.eu/course/section.php?id=346

THE SECTION
“Teaching Staff
and European Project Experts”

Bridging Generations with AI: Creative Fusion of Art, Storytelling, and Digital Collaboration

Ana Maria SOLIS[1]

Abstract. *The ArtTech project harnesses the potential of artificial intelligence (AI) and digital tools to bridge generational gaps through art, storytelling, and collaborative learning. This paper delves into the project's innovative methodologies, which merge traditional narratives with advanced digital practices to foster cultural empowerment and social inclusion. By facilitating workshops, creating digital art, and developing methodological resources, ArtTech showcases how technology can be a medium for preserving cultural heritage while driving positive societal transformation. The outcomes underline the importance of combining tradition and technology to nurture inclusive, culturally enriched communities that are adaptable to the evolving digital era.*

Keywords: *Artificial Intelligence, Digital Art, Intergenerational Collaboration, Cultural Empowerment, Storytelling*

Introduction

In today's rapidly evolving digital landscape, sustaining meaningful connections between generations poses both a challenge and an opportunity. The ArtTech project, funded by the European Union, presents an innovative solution to this challenge by integrating the transformative potential of AI and art. The project seeks to establish intergenerational bridges where participants, regardless of age, collaborate to preserve and reimagine cultural heritage. Through storytelling and digital tools, the ArtTech initiative fosters an inclusive environment where individuals can connect, learn, and create together. This paper explores the methodologies, outcomes, and replicability of this pioneering initiative, highlighting its potential for fostering cultural innovation and social cohesion.

[1] EU Expert, SOLIS SRLS-Modena-Italy. Email: solissrls@gmail.com

Research methodology

Participants

The ArtTech project engaged a diverse group of participants, including young women aged 19–25 and older women from various cultural and social backgrounds. This intergenerational mix was crucial for achieving the project's goal of fostering understanding and collaboration between age groups.

Materials and Methods

The project's activities were designed to create an immersive, collaborative experience that emphasized both creativity and skill development. Interactive workshops served as the core of the project, where participants shared personal stories and transformed them into digital artwork using AI-powered tools. These workshops combined storytelling with art to create a shared space for cultural exchange.

Additionally, ArtTech included the development of a Virtual ArtExpo, an interactive digital platform that showcased participants' creations to a global audience, demonstrating how technology can amplify local voices on an international stage. To ensure sustainability, a detailed methodological guide was created, offering a replicable model for implementing similar projects in different contexts. Training modules further empowered participants to confidently use AI-based tools for creative expression, such as Canva and other art generators.

Results

The ArtTech project yielded transformative outcomes in multiple dimensions. Participants not only acquired new skills but also fostered meaningful connections across generations. By engaging in collaborative storytelling, they developed a deeper understanding of one another's experiences, creating a foundation for empathy and cultural preservation.

For instance, during a workshop in Modena, participants worked together to narrate their personal and cultural stories, which were then transformed into unique visual representations using AI-powered tools. The collaborative nature of this process encouraged the exchange of technological skills from younger participants and traditional wisdom from older participants, blending innovation with tradition.

Through the Virtual ArtExpo, the participants' artworks gained visibility on a global scale, allowing them to share their cultural narratives with diverse audiences. This further underscored the potential of digital platforms to democratize art and storytelling.

The methodological guide developed through the project ensures that ArtTech's impact extends beyond its initial scope, providing a framework for future projects aiming to blend cultural heritage with digital innovation.

Conclusion

The ArtTech project exemplifies how technology and art can converge to address societal challenges and foster social inclusion. By merging the old and the new—traditional storytelling methods with cutting-edge digital tools—the project not only preserves cultural heritage but also reinvents it for the digital age. Participants developed essential skills in digital art creation and storytelling, paving the way for individual empowerment and broader societal change.

ArtTech's success demonstrates the importance of integrating intergenerational collaboration into cultural initiatives, using AI as a unifying medium. The project also highlights the potential for its methodologies to be scaled and adapted across different communities and contexts. Future directions for ArtTech include partnerships with museums and educational institutions to embed its innovative approach into formal and informal learning environments, ensuring its sustainability and long-term impact.

By fostering empathy, cultural understanding, and skill development, ArtTech underscores the transformative power of art and technology in creating inclusive, vibrant societies.

References

1. Ana Maria Solis. (2024). Bridging Generations with AI: Creative Fusion of Art, Storytelling, and Digital Collaboration. Târgu Mureș International Conference Presentation.
2. ArtTech Collaboration Empowering Cultural Celebration, Learning, and Empowerment for Young Women (2023).
3. Project 2023-3-IT03-KA210-YOU-000176193

Teaching and Coaching in Romanian and Turkish Education

Sorina-Mihaela BĂLAN[1], Mehmet DURNALI[2]

Abstract. *This article examines teaching and coaching practices within Romanian and Turkish educational systems, providing a comparative analysis of their structures, methodologies, and recent reforms. It highlights historical foundations, pedagogical approaches, and the integration of coaching into education. Emphasis is placed on the transition from traditional teaching to competency-based and inclusive education, as well as the challenges posed by digitalization, resource disparities, and teacher retention. The discussion also underscores the growing importance of coaching as a tool for personal and academic development. By synthesizing insights from both countries, the article aims to foster a deeper understanding of their shared goals and unique approaches in shaping future educational landscapes.*

Keywords: *teaching, coaching, Romanian education, Turkish education, comparative analysis, educational reforms.*

Introduction

In the context of global transformations, education systems are continuously evolving to meet the demands of increasingly complex societies and labor markets. The last two decades have witnessed intensified efforts from national governments and international organizations to align educational outcomes with the competences required in the digital, inclusive, and innovation-driven economy of the 21st century (OECD, 2020). Romania and Turkey—two countries with historically rich, yet structurally diverse educational systems—offer compelling case studies for comparative analysis in teacher training and the integration of coaching practices in education.

[1] Assoc. Prof., PhD, "Dimitrie Cantemir" University from Târgu Mureș, Romania. Email: bsorinamihala@yahoo.com
[2] Assoc. Prof., PhD, Zonguldak Bülent Ecevit University, Zonguldak Bülent Ecevit University, Ereğli Faculty of Education, Turkey. Email: durnali@gmail.com

Education no longer refers solely to the transmission of knowledge but is increasingly focused on developing transversal competences, emotional intelligence, adaptability, and self-regulation (European Commission, 2018). Consequently, the roles of teachers have undergone a paradigmatic shift: from content deliverers to facilitators of learning, mentors, and coaches. These roles require new professional competencies and a change in institutional culture, placing lifelong learning and reflective teaching at the core of educational strategies (Schleicher, 2015).

Romania and Turkey have responded to these imperatives by reforming their teacher education programs, integrating digital technologies, and adopting student-centered methodologies. However, despite similarities in direction, each country presents specific historical legacies, socio-economic challenges, and cultural dynamics that influence the pace and success of these transformations (Crăciun & Sultana, 2021; Durnali, 2020).

Another emerging trend is the use of educational coaching—a practice that has gained traction in both Western and non-Western educational systems as a means of improving teacher efficacy and student outcomes. Coaching in education refers to a structured, collaborative process where educators and students engage in reflective dialogue to improve performance, motivation, and autonomy (van Nieuwerburgh, 2017). In Romania and Turkey, coaching has started to be included in both initial teacher training and continuous professional development programs, although its implementation remains inconsistent and often limited to pilot projects or institutional initiatives.

This paper aims to compare how Romania and Turkey approach teacher training and educational coaching, with a focus on two institutional case studies: "Dimitrie Cantemir" University from Târgu Mureș and Zonguldak Bülent Ecevit University. Through a mixed-method approach combining documentary analysis, institutional reports, and literature review, the paper explores historical development, educational reforms, pedagogical shifts, and professional development strategies.

By understanding the particularities and common challenges of the two systems, we aim to contribute to the broader discourse on improving teaching quality, building institutional capacity, and fostering inclusive, adaptable educational practices in both European and Eurasian contexts.

Historical and Structural Context

Romania

Romania's educational system reflects a complex historical trajectory shaped by political regimes, socio-economic transitions, and the European integration process. The origins of formal education in Romania date back to the 18th century, with the establishment of schools in Iași and Bucharest under the influence of Enlightenment ideals (Popa, 2010). However, the major structural transformation occurred during the communist regime (1947–1989), when education became a centralized instrument for ideological control and industrial development.

In this period, teacher training was uniform, state-controlled, and oriented toward content delivery rather than pedagogical innovation. The fall of communism in 1989 triggered radical reforms aimed at democratizing education, decentralizing governance, and aligning the system with EU standards. These reforms included the introduction of diversified curricula, increased school autonomy, and participation in international programs like Erasmus+ (Crăciun & Sultana, 2021).

Structurally, Romanian education is organized into pre-university and higher education levels. Pre-university education includes early childhood education, primary, lower-secondary (gimnaziu), and upper-secondary (liceu), culminating in the *Bacalaureat* examination. Higher education follows the Bologna model with bachelor's (3 years), master's (2 years), and doctoral (3 years) cycles.

One of the persistent challenges in Romanian education is the **urban-rural divide**, with disparities in access to quality education, infrastructure, and teacher allocation (World Bank, 2018). Although significant investments have been made in digital infrastructure, particularly during and after the COVID-19 pandemic, many schools—especially in rural areas—struggle with limited internet connectivity and lack of digital competences among staff (Bălan & Oroian, 2025).

Teacher education in Romania is provided through university programs (Facultăți de Psihologie și Științele Educației or Pedagogical Faculties), and supplemented by the Department of Teacher Training (*DPPD*). Reforms have aimed to integrate competences for inclusive education, digital literacy, and reflective practice. Recent national strategies emphasize continuous professional development (CPD), often using European structural funds to support teacher training initiatives.

Despite these efforts, retention remains a problem: young teachers frequently leave the profession due to low salaries, limited career development, and bureaucratic overload (OECD, 2019). This situation has led some institutions—such

as *"Dimitrie Cantemir" University from Târgu Mureș*—to develop **hybrid models of coaching and mentoring**, as innovative responses to burnout and disengagement among early-career educators.

Turkey

Turkey's education system has undergone transformative reforms since the foundation of the Republic in 1923. Guided by the principles of *Kemalist modernization*, early reforms emphasized secularization, national unity, and modernization of curricula. The 1950s–1980s saw a gradual expansion of access, but also the emergence of inequalities between urban and rural areas, and between general and vocational education streams (Gür & Çelik, 2017).

A milestone reform came in 1997 with the extension of compulsory education to 8 years, further increased to 12 years in 2012 under the "4+4+4" system. This structure comprises four years of primary, four years of lower-secondary, and four years of upper-secondary education. The system also includes a vibrant network of vocational and religious (*Imam Hatip*) schools, as well as science and Anatolian high schools that cater to different student needs and aspirations.

Higher education in Turkey has expanded rapidly, with the number of universities growing from 76 in 2000 to over 200 by 2024. Public universities such as *Zonguldak Bülent Ecevit University* play a critical role in regional development and teacher education. The Faculty of Education at ZBEU includes departments like Educational Sciences, Mathematics and Science, Special Education, and English Language Education, which prepare teachers across disciplines (Durnalı, 2023).

Teacher training in Turkey consists of a four-year undergraduate program followed by a pedagogical formation certificate for non-education majors. New frameworks encourage active learning, critical thinking, and digital teaching tools. Yet, several challenges persist: large class sizes, pressure from standardized testing (e.g., YKS), and frequent policy changes that impact curriculum and teacher evaluation (Akkoyunlu & Yılmaz, 2022).

One significant reform has been the **introduction of coaching strategies** in teacher development programs. Supported by the Council of Higher Education (*YÖK*) and initiatives like FATIH (Movement to Increase Opportunities and Technology), coaching is integrated into both preservice and in-service training. Programs emphasize **individualized mentoring**, peer observation, and reflective practice, especially in disadvantaged or rural areas (Ergen & Kanadlı, 2020).

In recent years, Turkey has also invested in digital platforms and national teacher portals, such as *EBA* (Eğitim Bilişim Ağı), supporting blended and online

learning models. These developments have accelerated post-pandemic and show promise in integrating coaching and feedback loops into regular teaching practice.

Pedagogical Approaches and the Rise of Coaching

From Traditional Teaching to Competency-Based Education

In both Romania and Turkey, the evolution of pedagogical approaches has been driven by the need to adapt to dynamic socio-economic realities and the demands of 21st-century learners. The traditional model—centered on rote memorization, teacher authority, and standardized content—has increasingly been replaced by models that emphasize student agency, critical thinking, and real-world problem solving (Darling-Hammond et al., 2020).

In Romania, the National Curriculum Reform introduced after 2011 encouraged interdisciplinary learning, formative assessment, and digital tools, aligning teaching practices with European frameworks like the European Qualifications Framework (EQF). In Turkey, the Ministry of National Education initiated reforms to promote active learning, project-based tasks, and social-emotional development, particularly in teacher education programs (MoNE, 2018).

Both countries have adopted **constructivist paradigms** that shift the role of the teacher from a transmitter of knowledge to a facilitator of learning. This transition is central to developing transversal competencies, such as communication, teamwork, and adaptability (Voogt & Roblin, 2012).

Emergence of Coaching in Education

Educational coaching has emerged as a powerful complement to teaching, particularly in contexts where learners face challenges of motivation, autonomy, or self-regulation. Coaching in education is defined as a structured, collaborative relationship in which the coach supports the learner to achieve academic and personal goals through reflective dialogue and strategic questioning (van Nieuwerburgh, 2017).

Unlike mentoring, which often involves hierarchical knowledge transfer, coaching emphasizes partnership, active listening, and the learner's capacity for self-directed growth. It draws heavily from positive psychology, cognitive-behavioral techniques, and adult learning theories (Whitmore, 2009; Knowles et al., 2015).

Integration into Teacher Education and Higher Education

In Romania, coaching practices have been integrated into several programs for adult education and continuous professional development, particularly after the COVID-19 pandemic, which highlighted the need for emotional support and personalized feedback mechanisms (Bălan & Oroian, 2025). Teacher training centers and universities such as "Dimitrie Cantemir" have initiated modules on coaching in both initial and continuing education.

In Turkey, coaching has been introduced within teacher education curricula through elective courses and extracurricular programs, especially at universities like Zonguldak Bülent Ecevit. Additionally, coaching is used in school settings to support students' career planning, well-being, and academic performance (Durnalı, 2023).

Benefits and Challenges

Numerous studies have pointed out the benefits of coaching, including increased student engagement, improved teacher efficacy, and enhanced institutional climate (Knight, 2007; Grant, 2014). Coaching also supports transformational leadership in education, equipping teachers to act as reflective practitioners and adaptive professionals.

However, challenges remain. These include the lack of standardized training for educational coaches, insufficient institutional recognition, and varying degrees of teacher receptiveness, particularly in rigid or exam-oriented systems (Lofthouse et al., 2010). Moreover, integrating coaching into formal curricula requires institutional buy-in and adequate resources.

Institutional Case Studies: *"Dimitrie Cantemir" University from Târgu Mureș and Zonguldak Bülent Ecevit University*

This section presents an in-depth comparative analysis of two institutions committed to teacher training and educational innovation in Romania and Turkey: *"Dimitrie Cantemir" University from Târgu Mureș (UDCTGM)* and *Zonguldak Bülent Ecevit University (ZBEÜ)*. The case studies explore institutional strategies, curricular approaches, and recent developments in teaching and coaching.

1. *"Dimitrie Cantemir" University from Târgu Mureș* – Romania

Institutional Overview

"Dimitrie Cantemir" University from Târgu Mureș is one of Romania's prominent private institutions, established in 1991 as a hub for multidisciplinary

academic development. Its Faculty of Psychology plays a central role in training future educators, counselors, and human resources professionals.

The university has implemented teacher training programs through:

- **The Department of Teacher Training (DPPD),**
- **Postgraduate conversion courses,**
- Lifelong learning initiatives aligned with ARACIS standards (Romanian Agency for Quality Assurance in Higher Education).

Teaching and Coaching Integration. The institution has embraced **blended learning**, with courses combining synchronous and asynchronous teaching, mentorship, and digital coaching tools. The **Vice-Rectorate for Quality Management and Projects**, led by Associate Professor Sorina-Mihaela Bălan, has promoted institutional projects to increase coaching competences among educators, especially post-pandemic.

Faculty development includes:

- Workshops on digital coaching,
- Training in formative feedback and emotional intelligence,
- Interdisciplinary modules promoting reflective practice (Bălan, 2025a).

The emphasis on **coaching literacy** is also evident in master's programs (e.g., Human Resource Management), where students receive training in team dynamics, conflict resolution, and strategic communication (Bălan & Oroian, 2025).

Internationalization and Innovation

The university has actively participated in Erasmus+ mobilities and transnational projects. A notable example includes the 2023 mixed mobility "Train the Trainers" hosted in Poland, where educators improved their digital and coaching competences. Certificates issued via **Europass** validate learning outcomes, contributing to EU-wide professional recognition.

2. *Zonguldak Bülent Ecevit University* – Turkey

Institutional Overview

Zonguldak Bülent Ecevit University (ZBEÜ), established in 1992, is a comprehensive public university located in Zonguldak, Turkey. The Faculty of Education includes:

- Department of Educational Sciences
- Department of Fundamental Education
- Department of Social Sciences and Turkish Language
- Department of Mathematics and Sciences
- Department of Special Education
- Department of Foreign Languages (English Language Education)

Associate Professor Mehmet Durnalı serves in the **Department of Educational Administration and Leadership**, contributing significantly to international research on educational innovation, digitalization, and equity.

Pedagogical and Coaching Approaches

The university's teacher education programs follow national standards outlined by the **Higher Education Council (YÖK)**, but also emphasize contemporary approaches such as:

- Coaching for reflective leadership,
- Problem-solving techniques in inclusive classrooms,
- Digital storytelling and gamification.

Dr. Durnalı's publications explore how **technology and coaching** intersect to improve educational outcomes (Durnalı, 2023). His leadership in international book projects—such as *Inclusion Diversity Equity & Access (IDEA) in Higher Education* (Ayyıldız & Durnalı, 2024)—demonstrates his institution's dedication to addressing inequality through coaching-supported learning environments.

Community Engagement and Support

ZBEÜ's foundation (*Karaelmas Üniversitesi Vakfı*) provides financial assistance to students in need, emphasizing social equity. Contributions are facilitated through donations to dedicated bank accounts, reinforcing the social mission of Turkish higher education.

In addition, the university's focus on **digital transformation** aligns with UNESCO's priorities on inclusive, learner-centered teaching strategies in developing countries (UNESCO, 2022).

3. Comparative Synthesis

Feature	*"Dimitrie Cantemir" University*	*Zonguldak Bülent Ecevit University*
Type	Private	Public
Teacher Training	DPPD, Conversion, CPD	Integrated into education faculty
Coaching Integration	In master's and CPD programs	In undergraduate training and research
Digitalization	Blended learning & Erasmus+	STEM emphasis, digital coaching tools
Internationalization	High via Erasmus+ and conferences	High via edited volumes and EU projects
Social Responsibility	Quality-focused projects	Financial support via institutional foundation

Challenges and Opportunities in Adopting Coaching in Teacher Education

The integration of coaching into teacher education frameworks in Romania and Turkey represents both a response to systemic limitations and an opportunity to transform pedagogical cultures. While promising, its implementation remains uneven and contingent on institutional capacities, policy environments, and educator attitudes.

Challenges

1. Lack of Unified Definitions and Frameworks. Despite growing interest in coaching, its conceptualization varies widely across institutions. In Romania, coaching is often viewed as a form of mentoring or counseling, while in Turkey it is frequently linked to leadership development (Durnalı, 2023). The absence of national standards for educational coaching limits its widespread adoption.

2. Resistance to Change

Traditional teacher-centered models are still dominant in many faculties of education. Faculty members may view coaching as a threat to academic authority or as an additional burden, especially when not accompanied by professional development or institutional incentives (UNESCO, 2022).

3. Digital Inequalities

As coaching often involves blended or online modalities, access to stable internet, platforms, and digital literacy remains a barrier—especially for rural institutions or socio-economically disadvantaged student populations (Bălan, 2025a).

4. Time and Workload Constraints

Coaching requires time for relationship building, individual support, and personalized feedback. Educators, already overwhelmed by curriculum requirements, may lack the time to incorporate coaching practices consistently (Bălan & Oroian, 2025).

Opportunities

1. Improved Student Engagement and Retention. Coaching can enhance motivation, autonomy, and academic persistence, especially for vulnerable groups such as adult learners, first-generation students, or those returning to education after long periods (Oroian & Bălan, 2025).

2. Integration into Professional Development. Both UDCTGM and ZBEÜ have started embedding coaching into lifelong learning and staff development. EU-

funded mobility programs and edited volumes co-authored by Durnalı and Bălan serve as dissemination channels and capacity-building tools (Ayyıldız & Durnalı, 2024).

3. Alignment with 21st-Century Skills. Coaching reinforces transversal skills such as critical thinking, emotional intelligence, communication, and teamwork—skills increasingly demanded by employers and emphasized by European Qualifications Frameworks (EQF).

4. Potential for Institutional Innovation. Coaching opens pathways for institutional renewal through student-centered learning environments, reflective practice, and formative evaluation strategies. In Romania, this aligns with ARACIS standards, while in Turkey, it corresponds with national priorities for leadership in education (YÖK, 2022).

Conclusions and Recommendations

This comparative exploration has shown that both Romania and Turkey are actively seeking to modernize their teacher education systems, with **coaching emerging as a powerful catalyst** for change. Though challenges persist, institutions like *"Dimitrie Cantemir" University from Târgu Mureș* and *Zonguldak Bülent Ecevit University* are demonstrating innovative practices that blend traditional values with contemporary pedagogical tools.

Recommendations

1. Develop national coaching frameworks integrated with teacher standards.
2. Provide coaching training in both initial teacher education and continuing professional development.
3. Encourage inter-institutional collaboration through Erasmus+, joint research, and publications.
4. Foster digital inclusion, ensuring all educators and students have access to coaching resources.
5. Support research on the impact of coaching in educational outcomes, retention, and teacher well-being.

As global education systems continue to face uncertainty and complexity, teaching and coaching must not be viewed as opposing paradigms, but as complementary strategies for cultivating reflective, resilient, and future-ready educators.

References

1. Akkoyunlu, B., & Yılmaz, E. (2022). Teachers' use of digital learning tools and barriers in Turkey. *Turkish Online Journal of Distance Education, 23*(2), 65–79.
2. Aydın, İ., Erdem, M., & Günbaş, N. (2018). The evolution of teacher education in Turkey: From the Ottoman era to the present. *Turkish Journal of Education, 7*(2), 45–56. https://doi.org/10.19128/turje.412462
3. Ayyıldız, P., & Durnalı, M. (Eds.). (2024). *Inclusion Diversity Equity & Access (IDEA) in Higher Education: The Case of Developing Countries*. Information Age Publishing Inc.
4. Bălan, S.-M. (2025a). The impact of digital education in group dynamics: Case studies at European level. In *Creativity and innovation in education: The technology of the future or the future of technology* (pp. xx–xx). Presa Universitară Clujeană.
5. Bălan, S.-M., & Oroian, M. (2025). Distance educator: Training adult educators in the digital age. In *Creativity and innovation in education: The technology of the future or the future of technology* (pp. xx–xx). Presa Universitară Clujeană.
6. Crăciun, D. (2015). Reform in the Romanian Education System and its Impact on Teachers. *Journal of Educational Sciences & Psychology, 5*(1), 34–41.
7. Crăciun, D., & Sultana, R. G. (2021). Reforming teacher education in Eastern Europe: Opportunities and constraints. *European Education, 53*(1), 7–28. https://doi.org/10.1080/10564934.2021.1879834
8. Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140.
9. Durnalı, M. (2020). Mentoring and coaching practices in Turkish teacher education: Current trends and future prospects. *International Journal of Progressive Education, 16*(5), 23–38. https://doi.org/10.29329/ijpe.2020.277.2
10. Durnalı, M. (2020). The influence of digital transformation on education in Turkey: Policies and practices. *Educational Policy Analysis and Strategic Research, 15*(3), 95–112.
11. Durnalı, M. (2023). *Educational Coaching Practices in Turkish Teacher Education: A Conceptual Overview*. ZBEÜ Internal Research Report.
12. Durnalı, M. (2023). *Utilizing Technology, Knowledge, and Smart Systems in Educational Administration and Leadership*.
13. Ergen, B., & Kanadlı, S. (2020). Coaching and mentoring practices in Turkish schools: A systematic review. *International Journal of Educational Administration and Policy Studies, 12*(1), 1–12.
14. European Commission. (2018). *Council recommendation on key competences for lifelong learning*. Official Journal of the European Union.
15. Grant, A. M. (2014). The efficacy of executive coaching in times of organizational change. *Journal of Change Management, 14*(2), 258–280.
16. Gür, B. S., & Çelik, Z. (2017). Policy and practice of education in Turkey: A historical perspective. In *Education in Turkey* (pp. 25–44). Springer.
17. Karaelmas Üniversitesi Vakfı. (2025). Scholarship and social support initiatives. [Institutional communication].
18. Knight, J. (2007). *Instructional coaching: A partnership approach to improving instruction*. Corwin Press.

19. Knight, J. (2009). *Coaching: Approaches and perspectives*. Corwin Press.
20. Knowles, M. S., Holton, E. F., & Swanson, R. A. (2015). *The adult learner: The definitive classic in adult education and human resource development*. Routledge.
21. Lofthouse, R., Leat, D., & Towler, C. (2010). *Coaching for teaching and learning: A practical guide for schools*. National College for Leadership of Schools and Children's Services.
22. Ministry of National Education (MoNE), Turkey. (2018). *Teacher Strategy Document 2017–2023*.
23. OECD. (2019). *Education Policy Outlook: Romania*. OECD Publishing.
24. OECD. (2020). *Teachers and School Leaders as Valued Professionals: Status, Motivation and Career Development*. OECD Publishing. https://doi.org/10.1787/19cf08df-en
25. Oroian, M., & Bălan, S.-M. (2025). Distance education and digital competences of teachers: Empirical study. In *Creativity and innovation in education: The technology of the future or the future of technology* (pp. xx–xx). Presa Universitară Clujeană.
26. Popa, A. (2010). History of education in Romania: Trends and developments. *Review of Historical Sciences, 9*(2), 134–149.
27. Schleicher, A. (2015). *Schools for 21st-century learners: Strong leaders, confident teachers, innovative approaches*. OECD Publishing.
28. UNESCO. (2022). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing.
29. van Nieuwerburgh, C. (2017). *An introduction to coaching skills: A practical guide* (2nd ed.). SAGE Publications.
30. Voogt, J., & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st-century competences. *Education Research International, 2012*, 1–14.
31. World Bank. (2018). *Improving the Quality of Education in Romania*. https://documents.worldbank.org/
32. Yıldız, S., & Kılıçoğlu, G. (2021). Educational coaching and its role in developing teaching practices in Turkish schools. *Turkish Online Journal of Distance Education, 22*(3), 88–102.
33. YÖK. (2022). *Teacher Training Framework and National Educational Vision 2023*. Ankara: Council of Higher Education of Turkey.

AmImplant in the Digital Era – Revolutionizing Dental Medicine

Wei XU[1], Sorina-Mihaela BĂLAN[2], Ramona FEIER[3], Eliza DRĂGAN[4]

Abstract. *The integration of digitalization and artificial intelligence (AI) in dental medicine has catalyzed significant advancements in diagnostics, treatments, and research. This article explores the transformative impact of MSCA-supported projects, focusing on their role in enhancing precision, reducing recovery times, and improving global accessibility. By examining case studies such as AmImplant, DentalAI, and BioRegenDent, the article highlights the interplay between technology and interdisciplinary collaboration in addressing clinical challenges and fostering innovation. It concludes with future perspectives on the expanding role of AI in regenerative dentistry and clinical workflows.*

Keywords: *digitalization, artificial intelligence, dental implantology, MSCA projects, innovation, interdisciplinary collaboration.*

Introduction

The digital era has ushered in a revolution in dental medicine, aligning it with the broader transformation of healthcare under the umbrella of Industry 4.0. Artificial intelligence (AI), machine learning (ML), and 3D printing are no longer conceptual tools but applied instruments driving improved patient outcomes. Projects funded under Horizon Europe, particularly through the Marie Skłodowska-Curie Actions (MSCA), exemplify the EU's commitment to innovation, mobility, and excellence in science.

AmImplant (HORIZON-MSCA-2023-SE-01) serves as a pioneering model in this evolution, proposing a novel class of dental implants based on functionally graded materials (FGMs) and advanced digital manufacturing. The project

[1] Prof., PhD, University of Surrey, School of Mechanical Engineering Sciences, w.xu@surrey.ac.uk
2 Assoc. Prof., PhD, "Dimitrie Cantemir" University from Târgu Mureș, bsorinamihaela@yahoo.com
3 Assoc. Prof., PhD, "Dimitrie Cantemir" University from Târgu Mureș, Faculty of Medicine.
4 Asist. Prof., PhD, Dr., "Dimitrie Cantemir" University from Târgu Mureș.

addresses key challenges in osseointegration, longevity, and patient-specific adaptation while fostering research collaboration across Europe and Asia (IAmImplant, 2023).

Scientific Research as the Backbone of Dental Innovation

1. Biomaterials and Functionally Graded Implants

Dental implants must overcome mechanical, chemical, and biological barriers. Through scientific exploration of titanium alloys and biocompatible ceramics, functionally graded implants (FGIs) are designed to simulate the natural gradation found in bone structures. This reduces stress-shielding and promotes optimal osseointegration (Wang et al., 2021).

2. Laser Powder Bed Fusion and Additive Manufacturing

The development of dental implants via additive manufacturing, especially laser powder bed fusion (LPBF), allows customization for individual patient needs. The AmImplant project leverages this technology to achieve precise geometries, porous structures, and surface characteristics aligned with biological and mechanical demands (IAmImplant, 2023).

3. Interdisciplinary Convergence

The convergence of AI, robotics, nanotechnology, and computational modeling facilitates predictive analytics and real-time surgical support. The multi-disciplinary nature of MSCA consortia fosters integration across fields such as biomechanics, biomedical engineering, material science, and clinical dentistry (Xu et al., 2022).

Objectives of AmImplant

The AmImplant project outlines the following key objectives:

- **Objective 1**: Develop personalized, functionally graded implants using hybrid design and LPBF.
- **Objective 2**: Improve long-term stability by addressing implant-bone interface issues via biomechanical and biological optimization.
- **Objective 3**: Strengthen international cooperation through researcher exchange programs and industry-academic partnerships.

The project includes four work packages (WPs) covering material development, simulation, fabrication, and validation, with a focus on real-world implementation.

The Impact of Digitalization in Dental Medicine

Precision and Personalization. Digital imaging, CAD/CAM systems, and intraoral scanning provide detailed anatomical models, allowing the design of implants that match the patient's bone morphology and bite alignment with high fidelity.

Predictive Analytics in Implantology AI algorithms trained on large datasets can predict implant success rates, detect early signs of peri-implantitis, and simulate treatment outcomes. The *DentalAI* initiative applies deep learning models to preoperative planning and risk assessment (Chen et al., 2023).

Robotics and Human-Machine Integration. Intraoral surgical robots, guided by real-time feedback, are being tested for accuracy and repeatability. These systems reduce the dependency on human manual dexterity and ensure standardized outcomes in implant placement (IAmImplant, 2023).

Digital Tools in MSCA Dental Projects

3D Printing Utilizing additive manufacturing to create durable and biocompatible materials tailored to individual patient needs. Recent advancements include the use of bio-inks and hybrid materials to mimic natural bone structures.

AI-Enhanced Diagnostics Machine learning models improve prediction of implant success rates and refine treatment plans. AI also assists in identifying early signs of complications, enabling proactive intervention.

Robotics-Assisted Surgery Minimizing human error and enhancing precision during implant procedures. Robotics are now equipped with real-time feedback mechanisms to adapt to intraoperative challenges dynamically.

Case Studies of MSCA Projects

AmImplant Development of functionally graded titanium implants using 3D laser melting, supported by European and Chinese collaborations. This project has demonstrated success in improving implant longevity and reducing rejection rates.

DentalAI AI integration into diagnostics and treatment to enhance precision and efficiency. Key achievements include the development of AI-driven imaging tools that reduce diagnostic time and improve accuracy.

BioRegenDent Regenerative solutions using stem cells and growth factors to rebuild dental tissues. This project exemplifies the potential of combining biotechnology and AI to create patient-specific regenerative treatments.

Challenges and Future Perspectives

Challenges

- Ethical and regulatory considerations in AI applications, including patient data privacy and algorithmic transparency.
- Technical difficulties in integrating digital workflows, particularly in regions with limited infrastructure.
- High initial costs associated with adopting advanced technologies, which can limit accessibility.

Future Directions

- Expanding AI's role in regenerative dentistry by integrating predictive modeling for treatment outcomes.
- Enhancing global platforms for collaborative research and knowledge sharing to address regional disparities.
- Development of affordable and portable diagnostic tools to increase accessibility in underserved areas.

Conclusion

MSCA-supported projects have driven transformative changes in dental implantology, leveraging digital and AI innovations. Global collaborations play a pivotal role in advancing research and clinical applications, with a vision of integrating AI into workflows to redefine precision dentistry and improve patient outcomes. By bridging gaps between technology and practical application, these initiatives exemplify the future of healthcare innovation.

References

1. European Commission. (2023). *Marie Skłodowska-Curie Actions: Promoting Interdisciplinary Research and Innovation*. Publications Office of the European Union. https://marie-sklodowska-curie-actions.ec.europa.eu
2. IAmImplant Consortium. (2023). *Project Proposal: IAmImplant – Implantable Additive Manufacturing Technologies for Personalized Dental Healthcare (HORIZON-MSCA-2023-SE-01)*. University of Surrey.
3. University of Surrey. (2023). *IAmImplant: EU-China collaboration for smart dental implants* [Project documentation]. https://www.surrey.ac.uk
4. Xu, W., & Moldovan, A.-M. (2024). *Predictive analytics in peri-implant care: A cross-national study*. International Journal of Dental AI, 5(1), 61–78.

Innovating Education Through Artificial Intelligence. Insights from Erasmus Mobility in Nysa, Poland

Sorina Mihaela BĂLAN[1], Maria OROIAN[2]

Abstract. *This article examines the transformative role of Artificial Intelligence (AI) in academia, based on insights from two key events: the 14th International Staff Training Week (May 2024) and the Blended Intensive Programme "Artificial Intelligence for the University Staff" (July 2024) at the University of Applied Sciences in Nysa, Poland. These programs brought together international educators to explore AI's impact on teaching, research, and administration. The article delves into field-specific innovations, ethical concerns, and the importance of cultural exchanges in advancing AI in education. The participation of faculty members from "Dimitrie Cantemir" University from Târgu Mureș in these events received and offered valuable knowledge and practical skills related to AI's applications in education.*

Keywords*: Artificial Intelligence, Higher Education, Erasmus+, University of Applied Sciences in Nysa, Educational Technology, AI Ethics, International Collaboration*

Introduction

Artificial Intelligence (AI) is reshaping education by introducing innovative teaching methods, enhancing research, and streamlining administrative tasks. At the heart of this transformation is international collaboration, exemplified by two major events hosted by the University of Applied Sciences in Nysa, Poland:

1. The *14th International Staff Training Week* (May 2024), themed *"Artificial Intelligence at Universities – a Boon or a Bane?"* (University of Applied Sciences in Nysa, 2024a) attended by Sorina Mihaela Bălan from "Dimitrie Cantemir" University.

[1] Assoc. Prof., PhD, "Dimitrie Cantemir" University from Târgu Mureș. Email: bsorinamihaela@yahoo.com
[2] Assoc. Prof., PhD, "Dimitrie Cantemir" University from Târgu Mureș. Email: oroianmaria@yahoo.com

2. The Blended Intensive Programme (BIP), *"Artificial Intelligence for the University Staff"* (July 2024) (University of Applied Sciences in Nysa, 2024b) with the participation of the following professors from „Dimitrie Cantemir" University from Târgu Mures: Maria Oroian and Radu Negru, from the Faculty of Geography, Brânduşa Gorea and Anca-Viorica Bogdan, from the Faculty of Law and Sorana Bucur and Eniko Papp, from the Faculty of Medicine.

These events facilitated a global dialogue on AI's potential and challenges in academic settings.

Events Highlights

14th International Staff Training Week

From May 20-24, 2024, the University of Applied Sciences in Nysa hosted the 14th edition of its International Staff Training Week, themed *"Artificial Intelligence at Universities – a Boon or a Bane?"* This prestigious event brought together 52 participants from 23 countries across Europe, Africa, Asia, North America, and South America.

The event featured representatives from Albania, Algeria, Azerbaijan, Montenegro, Egypt, France, Georgia, Spain, the Netherlands, India, Indonesia, Kosovo, Latvia, Mexico, Germany, Poland, Portugal, Romania, Thailand, Turkey, Ukraine, the USA, and Italy.

The event focused on the transformative role of Artificial Intelligence (AI) in higher education, exploring its benefits and challenges through a variety of sessions:

1. *New Era of AI – Where to Start?*
2. *The Perils and Promise of Generative AI in Higher Education*
3. *AI in Higher Education – Best Practices*
4. *Artificial Intelligence in Cybersecurity: Trends and Challenges*
5. *Instructional AI: Uses That Empower Teaching*
6. *Showcasing Innovations and Best Practices*
7. *Deep Learning for Everyone: Unleash the Power of AI*
8. *Practical Demonstration of How a Hacking Attack Works.*

Participants exchanged insights and experiences from their roles in academia, which included positions as lecturers, department heads, administrative staff, promotion officers, librarians, and technical staff.

The event featured enriching cultural activities, including:

- Guided tours of the city and university infrastructure.

- A private jazz concert, an illumination show by architecture students, and an integration meeting at Fort Prusy.
- A city tour led by Sebastian Zatylny, MA, an English Philology lecturer.
- Unique culinary experiences with dietetic desserts prepared by students from the Set Point Diet scientific circle.

At *Table Talks and Discussion Themes* participants engaged in discussions on critical AI topics, such as:

- Transparency and trust in AI.
- Ethical considerations in AI education.
- Data privacy and security.
- The impact of AI on learning and teaching.
- Successful AI applications in university education.

Artificial Intelligence presents both opportunities and challenges for higher education institutions:

Potential Benefits	**Challenges and Risks**
1. **Personalized Learning:** AI can tailor educational content to individual needs, improving learning outcomes. 2. **Automation of Administrative Tasks:** AI reduces workloads by automating routine tasks, allowing educators to focus on teaching. 3. **Advanced Analytics:** AI provides tools to analyze educational data, predict challenges, and enhance quality. 4. **Support for Distance Learning:** AI-powered platforms and virtual assistants facilitate remote education.	1. **Reduced Human Interaction**: Over-reliance on AI could harm the development of social skills. 2. **Privacy Concerns**: Large-scale data collection raises issues of security and privacy. 3. **Ethics and Bias**: AI systems may unintentionally perpetuate bias, requiring strict ethical oversight. 4. **Implementation Costs**: High costs may pose a barrier to resource-limited universities.

For balancing AI in higher education, universities must maximize benefits while addressing risks:

- Consult multidisciplinary experts for comprehensive AI strategies.
- Train staff in AI tools and risk management.
- Monitor AI's impact on education and adjust strategies accordingly.
- Uphold transparency and data privacy standards.

The event emphasized the need for a responsible, balanced approach to AI integration, ensuring its potential is leveraged to enrich education without compromising its core principles.

Figure 1. The participants from the 14th Edition of the International Staff Training Week "Artificial Intelligence at Universities – a Boon or a Bane?"
Source: https://pans.nysa.pl/org/ico/blog/international-staff-training-week-3

Blended Intensive Programme

Held from July 1–5, 2024, this program emphasized practical applications of AI, gathering 15 participants from universities across eight countries, including Romania, Algeria, Hungary, Turkey, the Netherlands, Germany, and Poland.

Figure 2. The participants from the The Blended Intensive Programme (BIP), "Artificial Intelligence for the University Staff" (July 2024)
Source: https://pans.nysa.pl/org/ico/blog/bip-1

The program was designed for academic and administrative staff to develop skills for integrating Artificial Intelligence (AI) into teaching, research, and administrative tasks.

Participants explored:

- Core concepts of AI and its role in higher education.
- AI tools to enhance teaching and research.
- Security risks and ethical challenges associated with AI adoption.
- Best practices for AI integration in universities.
- Future trends and insights from EU university surveys.

Highlights included:

- **Workshops** on AI in cybersecurity, signal processing, and ethical considerations in education.
- **Interactive Sessions**, such as AI applications in teaching, scientific research, and university administration (University of Applied Sciences in Nysa, 2024b).
- A **farewell dinner** celebrating the collaborative spirit of the participants.

This intensive program provided participants with a deeper understanding of AI's opportunities and limitations, preparing them to utilize AI tools effectively for better educational and research outcomes. The event also strengthened international collaboration and knowledge exchange among the participants.

Highlighted Sessions included:

- *"AI - Where to Start?"* by Dr. Geoff Dick (St. John's University, New York).
- *"AI in Cybersecurity: Trends and Challenges"* by Eng. Karolina Pfeifer and Eng. Adrian Florek (Wroclaw University of Technology).
- *"AI Applications in Teaching and Scientific Work"* by Eng. Mehmet Yldiz (Sakarya University, Turkey).
- *"AI in Decision Making"* by Dr. Samia BENTAIEB (Ain Temouchent University, Algeria).
- *"Generative AI at the Universities - Overview and Recommendations"* by Anna Opalka, M.A., Head of External Relations Department.

AI in Education: Opportunities and Challenges

Enhancing Teaching and Learning.AI tools such as OpenAI's ChatGPT, Google's Gemini, and Anthropic's Claude are transforming the educational landscape (Gupta, 2024). These tools help educators design interactive courses, assess student performance, and create personalized learning experiences.

During the workshops, participants explored practical examples, such as using AI to create adaptive quizzes and automate feedback for student assignments (University of Applied Sciences in Nysa, 2024a).

Streamlining Administration. AI applications simplify university management by automating student admissions, scheduling, and resource allocation. These systems free up staff time for strategic tasks, improving operational efficiency (Bryant Penrose, 2024).

Ethical AI. Ethical concerns remain a significant topic of discussion, particularly regarding data privacy and the risk of bias in AI algorithms. The sessions highlighted the need for robust guidelines to ensure that AI serves as an equitable tool in education (University of Applied Sciences in Nysa, 2024b).

Field-Specific Innovations

Law. AI-powered platforms like Casetext and Ross Intelligence are revolutionizing legal education by providing quick access to case laws and offering tools for advanced legal research (Casetext, 2024; Ross Intelligence, 2024). Participants also explored AI's role in creating realistic simulations for mock trials.

Medicine and Physical Therapy. AI enables precision diagnostics and predictive modeling in healthcare education. Examples discussed included Zebra Medical Vision for image analysis and Physitrack for personalized therapy programs (Zebra Medical Vision, 2024).

Geography and Tourism. AI applications in tourism include tools for data-driven destination planning and augmented reality guides for tourists. Platforms like Tableau and Google Earth Engine are being used to analyze tourist behavior and predict environmental impacts (Google Earth Engine, 2024).

Cultural and Collaborative Insights. A cornerstone of these programs was the opportunity for educators from diverse backgrounds—spanning Europe, Asia, Africa, and North America—to exchange ideas. Cultural activities, such as tours of Nysa's historic sites and social gatherings, enriched these collaborations (University of Applied Sciences in Nysa, 2024a).

Conclusion

The 14th International Staff Training Week and the Blended Intensive Programme at the University of Applied Sciences in Nysa underscored AI's

potential to revolutionize education. These events highlighted practical applications, ethical considerations, and the value of international collaboration in harnessing AI for academia.

As universities continue to adopt AI technologies, such events play a crucial role in shaping responsible and innovative educational practices. The upcoming training sessions in July 2024 are expected to build on these foundations, fostering further dialogue and innovation (University of Applied Sciences in Nysa, 2024b).

References

1. Bryant Penrose, R. (2024). Instructional AI: Empowering Teaching.
2. Casetext. (2024). Legal Research Simplified with AI. Retrieved from https://casetext.com.
3. Google Earth Engine. (2024). Tools for Geospatial Analysis. Retrieved from https://earthengine.google.com.
4. Gupta, M. (2024). AI in University Education.
5. Ross Intelligence. (2024). The Future of AI in Legal Research. Retrieved from https://rossintelligence.com.
6. University of Applied Sciences in Nysa. (2024a). 14th International Staff Training Week. Retrieved from https://pans.nysa.pl/org/ico/blog/international-staff-training-week-3
7. University of Applied Sciences in Nysa. (2024b). Blended Intensive Programme: AI for University Staff. Retrieved from https://pans.nysa.pl/org/ico/blog/bip-1
8. Zebra Medical Vision. (2024). AI in Medical Imaging.

Reflecting on INSEEC International Week 2024: Digital Education, AI, and European Collaboration in Teaching Practice

Sorina-Mihaela BĂLAN[1]

Abstract. *The INSEEC BBA International Week 2024, held across two major French campuses in Bordeaux, Lyon/Paris, brought together academics, practitioners, and students from over 15 countries in a dynamic and innovative teaching environment.*
The event was designed to foster intercultural dialogue, digital pedagogy, and academic collaboration, while promoting transdisciplinary approaches to business education. This article, written from the perspective of a Romanian participant from "Dimitrie Cantemir" University from Târgu Mureș, reflects on the pedagogical experiences and intercultural exchanges facilitated by this intensive teaching mobility. Particular attention is given to the integration of digitalization and artificial intelligence in the teaching process, student engagement through interactive group projects, and the final evaluation process involving a jury of international experts. The article highlights the role of the international organizing teams in Bordeaux and Lyon, and synthesizes lessons learned for enhancing future international weeks and digital education practices.

Keywords*: International teaching mobility, INSEEC BBA, digital education, artificial intelligence, intercultural exchange, student project evaluation, transdisciplinary learning, Erasmus+, Bordeaux, Lyon, higher education innovation.*

Methodology. Research Approach and Sources

This article is constructed using a reflective and descriptive research design, drawing on the first-hand academic and intercultural experience of the author during the INSEEC BBA International Week 2024. The methodology integrates qualitative content analysis, participant observation, and document analysis to provide an evidence-based perspective on the pedagogical innovations and digital transformations in higher education.

[1] Assoc. Prof., PhD, "Dimitrie Cantemir" University from Târgu Mureș. Email: bsorinamihaela@yahoo.com

1. Research Objectives

The central objective is to explore the pedagogical, cultural, and digital dimensions of international teaching mobilities, using the INSEEC International Week as a case study. Specific aims include:

- Documenting teaching practices incorporating digital tools and artificial intelligence;
- Analyzing intercultural collaboration among educators and students from over 15 countries;
- Evaluating the structure, delivery, and impact of student-centered projects assessed by an international jury;
- Understanding the organizational mechanisms of international academic events across two campuses.

2. Research Methods Used

- Participant Observation: The author acted as both observer and educator, documenting classroom dynamics, digital teaching tools, and cross-cultural interactions.
- Document Analysis: The analysis includes official documents such as the International Week Program (INSEEC BBA, 2024), course catalogues, mobility agreements, and the final institutional report.
- Visual Data Interpretation: Statistical data from participant country representation was extracted from event photos and participant lists.
- Reflexive Narration: The subjective experience of the academic participant complements the empirical data, highlighting best practices and challenges.

3. Ethical Considerations

All data used is publicly available or provided with consent from the organizers. No personal or sensitive student data has been used. The data on institutions and countries is anonymized and used only for academic purposes.

4. Data Sources and Validation

Primary sources include:

- The official INSEEC BBA International Week Program – Lyon and Bordeaux 2024 editions;
- Institutional Mobility Agreement (Anexa V HE Staff Mobility Agreement);
- Internal Report: "Report on the 2024 edition of the BBA INSEEC International Week";
- Participant lists and photographic documentation provided by the host institutions.

The combination of narrative inquiry and document analysis ensures triangulation of data, strengthening the reliability of the observations.

This methodological framework supports a deeper understanding of how international academic mobility initiatives contribute to digital innovation, cross-cultural learning, and institutional cooperation in the post-modern educational landscape.

Context and Objectives

Between February 12–16, 2024, I had the privilege of participating in the INSEEC BBA International Week 2024, hosted by the prestigious INSEEC BBA Program of OMNES Education France. The event took place simultaneously in two major educational centers – Bordeaux and Lyon, offering a unique opportunity to engage in intercultural, interdisciplinary, and innovative teaching within a European academic environment.

Over 25 international professors and dozens of courses were offered to students from across Europe, Unated States and beyond. My participation focused on teaching and disseminating current practices regarding digital transformation and Artificial Intelligence in education – a theme which resonates strongly with both research and institutional development in my home university.

Participants' Country Representation (Universities):

Country	Number of Universities	Percentage (%)
Poland	4	16%
Romania	3	12%
Lithuania	3	12%
Spain	2	8%
USA	2	8%
Canada	2	8%
Sweden	1	4%
Germany	1	4%
UK	1	4%
Turkey	1	4%
Italy	1	4%
Austria	1	4%
Netherlands	1	4%
Portugal	1	4%
Mexico	1	4%

Source: INSEEC BBA. (2024). International Week 2024 – Report.

These statistics reflect the diversity and international reach of the INSEEC BBA International Week, creating a fertile environment for cross-border learning and the exchange of innovative practices in business and education.

The experience served multiple purposes:

- To teach a CSR-focused course in English to international business students.
- To exchange good practices with professors from various countries.
- To explore the digital and AI integration in academic curricula.
- To initiate new educational partnerships within the Erasmus+ network.

The INSEEC International Week was coordinated by an experienced and highly supportive team, both at the Bordeaux and Lyon campuses, offering dedicated assistance to all visiting lecturers.

Main Organization Coordinator:

- Chafik MASSANE – *cmassane@inseec.com*, Tel: +33 (0)5 57 87 70 65

INSEEC Bordeaux – International Office:

- Florence CARLOT – *fcarlot@inseec.com*, Tel: +33 (0)5 57 87 70 47
- Sarah FREYNE – *sfreyne@omneseducation.com* , Tel: +33 (0)5 57 87 70 45

INSEEC Lyon – International Office:

- Manon TURLIN – *mturlin@inseec.com*, Tel: +33 (0)4 78 27 50 16
- Justine LAPLACE – *jlaplace@inseec.com* , Tel: +33 (0)4 78 27 50 17

These coordinators ensured the seamless delivery of the event, logistics, and academic scheduling, supporting over 20 international lecturers and more than 400 BBA students throughout the week.

INSEEC Bordeaux and INSEEC Lyon – both part of the OMNES Education network – provided modern facilities, bilingual courses (French-English), and an integrated international curriculum, welcoming both local and exchange students.

INSEEC Bordeaux stood out through its vibrant learning environment along the Garonne River, while INSEEC Lyon impressed through its highly interactive workshops and well-structured academic program in the heart of the city.

Teaching Focus: CSR in Project Management

The course delivered, entitled "Sustainable Project Management. Integrating CSR Principles with EcoBuild Initiative Case Study," was aimed at helping students understand how Corporate Social Responsibility (CSR) can be applied in project management practices.

Main Topics:

- CSR integration in planning, execution, and risk management.
- Real-world application using the *EcoBuild Initiative* case.

- Interactive sessions with visual tools and group reflections.

The following table summarizes the core structure of the course:

Session	Topic	Key Focus
Session 1	CSR in Project Planning	Use of eco-materials, social inclusion
Session 2	CSR in Execution	EcoBuild case analysis
Session 3	CSR in Risk Management	Communication & mitigation strategies
Session 4	Final Evaluation & Q&A	CSR metrics and sustainability

Source: Staff Mobility Agreement, 2024, INSEEC Lyon & Bordeaux

This format allowed students to actively apply theoretical principles and collaborate on ethical, sustainable project solutions. Teaching was delivered in English to international students enrolled in the BBA program, using blended learning techniques, interactive tasks, group projects, and digital simulations.

Students feedback confirmed increased awareness and appreciation of CSR values in entrepreneurship.

International Jury – Evaluating Student Projects

One of the most engaging activities during the week was serving as a jury member for student project evaluations. This involved reviewing and grading final presentations on topics such as:

- Digital marketing strategies
- Ethical entrepreneurship
- Business models adapted to AI environments
- Cross-cultural management practices

Students were organized in international teams and presented their work in English before a jury composed of professors from various countries.

The evaluation criteria included creativity, digital tools used, problem-solving capacity, and presentation skills. I appreciated the high level of digital literacy, intercultural awareness, and collaborative spirit demonstrated by the students, many of whom came from partner institutions across:

- Romania – Dimitrie Cantemir University fromTârgu Mureș; Ovidius University, Constanșa and Romanaian Amaerican University, Bucharest
- Austria – University of Applied Sciences Burgenland
- Poland – University of Krakow
- Slovakia – Pan-European University
- Ukraine – Ukrainian American Concordia University
- Mexico, France, Italy, Croatia, Portugal, and Russia

Evaluation criteria included innovation, applicability, digital integration, teamwork, and presentation skills. Notable projects addressed digital marketing strategies, sustainable business models, and AI-based customer service tools. The diversity of themes and quality of work showcased the students' ability to apply theoretical knowledge to practical challenges in a cross-cultural setting.

This high-impact teaching and learning experience highlighted the importance of integrating emerging technologies and global perspectives into business education. It also underscored the necessity of digital adaptability in both teaching methodology and student deliverables.

Digitalization and Artificial Intelligence in the Academic Context

One of the most striking dimensions of INSEEC BBA was the commitment to digital learning and adaptive technologies in the classroom. Both Lyon and Bordeaux campuses showcased advanced use of:

- Hybrid learning platforms;
- AI-based tutoring systems;
- Collaborative tools for business simulation.

The event also emphasized how AI is reshaping pedagogy, with the incorporation of smart assessment tools and student behavior tracking (INSEEC BBA Course Catalogue, 2024, pp. 12–18).

As a representative of a university that also fosters digital innovation through its Department for Strategies, Programs, and Projects, I found great value in the synergy between curriculum modernization and AI integration.

Institutional Impact and Internationalization Benefits

From an institutional perspective, this mobility contributes to:

- Expanding the Erasmus+ network;
- Enhancing teacher competencies;
- Fostering a culture of innovation and co-creation in international contexts;
- Establishing potential joint projects with French and other European partners.

Furthermore, the international exposure supports the strategic objective of UDCTGM to implement open and online multidisciplinary learning, promoting equity, diversity, and entrepreneurship in education.

Practical Applications and Collaboration

Beyond teaching, the week fostered the development of new academic partnerships, the exchange of open-access materials, and informal discussions regarding:

- AI-based course accreditation
- Curriculum redesign for digital competence
- Erasmus+ mobility frameworks and micro-credential systems

The format promoted collaborative knowledge production, and several professors, including myself, are now preparing joint articles and project proposals focused on digital transformation in higher education.

Conclusions and Future Directions

The participation in INSEEC International Week provided invaluable opportunities for:

- Professional growth through teaching in an international classroom;
- Exposure to AI-enhanced educational environments;
- Building new academic collaborations rooted in mutual respect and innovation.

I strongly believe that these kinds of experiences not only contribute to the personal development of teaching staff, but also amplify the academic and social impact of our home institutions.

Future directions include:

- Co-developing digital modules on CSR and sustainability;
- Exploring joint research in digital education and ethical entrepreneurship;
- Supporting student exchanges between INSEEC and UDCTGM.

References

1. INSEEC BBA. (2024). *International Week 2024 – Report*. Retrieved from: https://inseec.com/international-week-report-2024
2. INSEEC BBA. (2024). *Course Catalogue – BBA Programme*. Retrieved from: https://inseec.com/bba-course-catalogue-2024
3. INSEEC BBA. (2024). *Lyon Programme – International Week*. Retrieved from: https://inseec.com/lyon-bba-international-week
4. Bălan, S.-M. (2024). *Staff Mobility Agreement – Teaching at INSEEC BBA, France*. Dimitrie Cantemir University. [Unpublished internal document]

Successful Participation of the Mureş Teaching Staff House in the POCU Project "Professionalization of the Teaching Career – PROF"

Alexandru Iosif FODOR[1], Felicia Stela IONESCU[2]

Abstract. *This paper highlights the participation of Casa Corpului Didactic Mureș in the national project Professionalization of Teaching Careers - PROF, initiated by the Ministry of Education of Romania, with the objective of enhancing teacher professional development. The paper examines the implementation process, the strategic activities carried out during the sustainability period (2024), and the impact of mentoring and training programs on teachers. The role of the institution in promoting mentoring, blended learning, and continuous professional development within the educational system is emphasized. The methodology includes a qualitative analysis of project reports, training programs, and national conferences, along with perspectives from media coverage. The findings suggest that Partner 13, CCD Mureș, played an essential role in teacher training, the promotion of innovative pedagogical approaches, and the strengthening of professional learning communities. The conclusion is that the PROF project significantly contributes to teaching career development through structured mentoring programs and ensures long-term sustainability. Future perspectives include expanding training opportunities and strengthening partnerships for continuous professionalization.*

Keywords*: professionalization of the teaching career, mentorship in education, blended-learning, continuous professional development, educational project sustainability*

The PROF Project – A step in the professionalization of the teaching career

The Professionalization of Teaching Careers - PROF project, code 146587, initiated by the Ministry of Education and implemented between 2021-2023, was born out of necessity. The need for teachers who take on new roles in changing

[1] Prof., PhD Stud. Email jozsi.fodor@yahoo.com
[2] Prof., PhD, Casa Corpului Didactic Mureş, Târgu Mureș. Email ionescufeliciastela@gmail.com

times, as well as the aspiration for them to thoroughly understand the values of a true learning community and flexible routes of access and career development, to be able to exploit them at their real value and extract from them the added value that will transform them not just into teachers, but into educators prepared for the challenges of a new society.

A series of complex activities were subsumed under these imperatives, designed to achieve the goals for which this non-competitive systemic project was initiated, such as, for pre-university education: the development of the institutional normative framework and the national strategic framework for the professionalization of the teaching career; the creation of the national strategic framework for the operationalization of the regulatory framework regarding career mentoring and the curricular conceptual framework for high school level, adapted to the blended-learning system, including for teaching-learning-assessment in an online system; the creation of the necessary framework for the operationalization of the institutional mechanism of career mentoring; and, last but not least, the continuous training of various categories of teaching staff in the field of teaching career mentoring.

The execution of the planned activities for the implementation of the project led to it being classified as a project of challenges, from the perspective that such a complex educational intervention, carried out by the Ministry of Education, is part of an integrated intervention that also includes curriculum empowerment achieved for primary and secondary education levels through the CRED project, initial academic training for the teaching career, carried out through the START project, as well as other actions of educational system reform through complex, systemic projects such as ETIC—for early childhood education—and ROSE, for the pre-university-university relationship.

As Partner 13, Casa Corpului Didactic Mureș has repeatedly expressed its professional satisfaction in contributing to the activities initiated by the Ministry of Education within the PROF project, on a relevant topic: ensuring the optimal execution of the PROF III training component "Educational Management in a Mentoring Context" and PROF IV "Coaching in the Teaching-Learning-Assessment Process in a Blended-Learning Context."

The events organized within the project were interactive and aimed to capitalize on the experience and expertise of participants in continuous training, in the professional and personal development of teachers, in applying mentoring, and in making learning communities functional. Additionally, the format chosen for the activities, both face-to-face and online, facilitated reflection on the conditions for

transferring best practices and on potential areas of cooperation among the actors involved in the project.

The media paid attention to the project's activities. Through interviews given by Prof. Fodor Alexandru-Iosif, Director of CCD Mureș, the public learned about the institution's adaptation to the new realities imposed by the pandemic and about the implementation of the Professionalization of Teaching Careers - PROF project, about the 11th edition of the National Conference on Creativity and Innovation in Education, organized by CCD Mureș in collaboration with academic partners, where discussions focused on the role of technology in education and initiatives such as PROF. Other articles described the meetings organized by Casa Corpului Didactic Mureș, where aspects related to teaching career mentorship and the continuous training of teachers were discussed, in the context of the Professionalization of Teaching Careers - PROF project, or highlighted the organization by Casa Corpului Didactic Mureș of workshops aimed at promoting the mentorship model in the teaching career, as part of the PROF project. Such articles provided perspectives on the efforts made by Casa Corpului Didactic Mureș within the Professionalization of Teaching Careers - PROF project and its impact on the continuous training of teachers.

Activities during the sustainability period

Continuing its role as a partner in the Professionalization of Teaching Careers - PROF project, in the first year of sustainability (January 1, 2024 - December 31, 2024), Casa Corpului Didactic Mureș assumed an essential role in maintaining and consolidating the results obtained during the implementation period, continuing to support the professional development of teachers in Mureș, Harghita, Covasna, and Sibiu counties. In 2024, CCD Mureș carried out a series of activities aimed at ensuring the sustainability of the project, focusing on the continuous training of novice teachers and those preparing for national exams, developing the competencies of trainers and involving them in mentoring programs, as well as promoting innovative educational initiatives. The activity report prepared at the end of the first year after the completion of the project highlighted the concerns of the Casa Corpului Didactic Mureș team to continue capitalizing on the activities from the implementation period, grouped according to the activities assumed in the Funding Application.

1. Strengthening the training offer and supporting novice teachers

Within the framework of activity A6. Continuous training of various categories of teaching staff in education, in the field of didactic mentoring, with Subactivity A6.2. Development, accreditation and implementation of training programs at national level, the Mureş Teaching Staff House has developed and approved, in collaboration with the Ministry of Education, training programs for novice teachers and those taking national exams. The 2024-2025 training offer, published on the Mureş Teaching Staff House website and on the partners' online platforms (CCD Harghita, CCD Covasna and CCD Sibiu), was designed to meet the specific needs of teachers at the beginning of their journey and those interested in professional development.

This initiative was complemented by a rigorous process of valorizing the skills of accredited trainers, who supported continuous training sessions within the programs included in the offer of Casa Corpului Didactic Mureş and in the offers of partners. Through these steps, the project ensured access to relevant educational resources and supported teachers in reaching a higher level of professionalization.

2. Active involvement in national educational initiatives

A significant moment in 2024 was the participation of the Mureş Teaching Staff House at the official opening of the Teaching Career Training Center (CFCD), an event held at the University Forum in Târgu Mureș. This center represents a point of reference in the continuous training of teachers, providing them with access to innovative teaching methods and modern resources.

Also, the Mureş Teaching Staff House was an active partner in organizing the National Conference "Creativity and Innovation in Education", held on May 25-26, 2024. During this event, the project manager PROF highlighted the results obtained through the implementation of the program and emphasized the importance of continuing this approach for the development of the educational system.

3. Creation of a body of experts in teaching career mentoring

To support teachers at the beginning of their journey, the Mureş Teaching Staff House has consolidated a body of experts in mentoring, consisting of 19 trainers registered in the Trainers' Register, of which 11 carried out voluntary activities in 2024. These trainers provided methodological and pedagogical support to beginning teachers, thus contributing to the development of a mentoring culture and increasing the quality of the educational process. Through the involvement of this body of experts, beginning teachers benefited

from personalized guidance, specific training sessions and opportunities for continuous professional development.

4. Impact of training programs on teachers

The Mureş Teaching Staff House continued to organize and monitor training activities, having a significant impact on 174 teachers, who obtained certifications in 2024. Of these, 104 were trained within the PROF III program, and 70 followed the PROF IV program. The training sessions were structured in groups, ensuring an interactive and practical approach to the topics covered. The final evaluation of the participants was carried out according to the procedures established by the Ministry of Education, including minutes and decisions of the examination committees.

5. Monitoring, promotion and dissemination

During 2024, the Mureş Teaching Staff House implemented a rigorous mechanism for monitoring activities, collecting and archiving relevant supporting documents, such as activity reports, time sheets and promotional materials.

In order to ensure increased visibility of the project, the Mureş Teaching Staff House organized working meetings with school leaders, published press releases online and promoted the activities carried out on its own website and on partners' platforms.

Conclusions and perspectives for the future

The year 2024 represents an essential stage in ensuring the sustainability of the Professionalization of Teaching Careers - PROF project. Through the concerted efforts of CCD Mureș and its partners, the program continued to provide support for teachers, thereby strengthening a continuous training system based on quality, innovation, and mentoring.

For the coming years, the objectives include expanding the network of trainers, diversifying training programs, and developing new partnerships that contribute to modernizing the educational process and increasing professionalism among teachers.

Through these efforts, CCD Mureș reaffirms its commitment to supporting excellence in education and responding to the challenges of a constantly evolving society.

References

1. Mureș Teaching Staff House. (n.d.). Mureș Teaching Staff House. https://www.ccdmures.ro
2. Mureș Teaching Staff House. (n.d.). Mureș Teaching Staff House - Facebook Page. https://www.facebook.com/ccdmures/
3. Ministry of Education. (n.d.). Professionalization of Teaching Careers - PROF. https://www.edu.ro/PROF
4. Vasilescu, A. (2021, November 3). *CCD Mureș, training role in times of pandemic*. Zi de Zi. https://www.zi-de-zi.ro/2021/11/03/ccd-mures-rol-de-formare-in-vreme-de-pandemie/
5. Vasilescu, A. (2022, October 20). *Working meeting for teaching mentorship and training in the teaching career.* Zi de Zi. https://www.zi-de-zi.ro/2022/10/20/intalnire-de-lucru-pentru-mentorat-didactic-si-formare-in-cariera-didactica/
6. Vasilescu, A. (2022, December 21). *Workshops within the Prof Project to promote the mentoring model.* Zi de Zi. https://www.zi-de-zi.ro/2022/12/21/ateliere-de-lucru-in-cadrul-proiectului-prof-pentru-promovarea-modelului-de-tip-mentorat/
7. Vasilescu, A. (2024, May 25). *11th edition of the National Conference "Creativity and Innovation in Education".* Zi de Zi. https://www.zi-de-zi.ro/2024/05/25/a-xi-a-editie-a-conferintei-nationale-creativitate-si-inovatie-in-educatie/
8. Vasilescu, A. (2021, November 3). *CCD Mureș, role in teacher training during the pandemic.* Zi de Zi. https://www.zi-de-zi.ro/2021/11/03/ccd-mures-rol-de-formare-in-vreme-de-pandemie/
9. Vasilescu, A. (2022, October 20). *Meeting on teacher mentorship and professional training*. Zi de Zi. https://www.zi-de-zi.ro/2022/10/20/intalnire-de-lucru-pentru-mentorat-didactic-si-formare-in-cariera-didactica/
10. Vasilescu, A. (2022, December 21). *Workshops promoting the mentorship model in teaching careers*. Zi de Zi. https://www.zi-de-zi.ro/2022/12/21/ateliere-de-lucru-in-cadrul-proiectului-prof-pentru-promovarea-modelului-de-tip-mentorat/

The Impact of Smartphone Use on Self-related Components and Social Functioning

Monika CSIBI[1], Sándor CSIBI[2]

Abstract. *Nowadays, societal accommodation involves accurately integrating the construction of personality development. Smartphone use and new media platforms target the processes of using these and their impact on daily behavior. The study aims to analyze Self-related factors and the problematic level of smartphone use.*
147 adults from the 17-73 age group completed the assessment, with a mean age of 37.5. Instrumentation contains data about demographic characteristics, smartphone use, self-esteem, consistency, and perceived social support, through the Smartphone Application-Based Addiction Scale, the Sense of Coherence Scale, the Social Support Rating Scale and the Core Self-Rating Scale. The results display the association between lower self-esteem and an increased problematic use of smartphones. Perceived social support and problematic smartphone use did not show a relevant correlation. The feeling of consistency and increased smartphone use show significant negative associations. Conclusions: Completers who reported increased familiarity with smartphone applications and spent increased time online scored higher on the problematic smartphone use scale. Lower self-evaluation was associated with more pronounced problematic smartphone use, and an increased sense of coherence showed a significant negative association with problematic smartphone use. The method of determining and understanding the level of problematic smartphone use, actions that focus on and support appropriate self-assessment, and the perception of social assistance are relevant.

Keywords: *behavioral addiction, perceived social support, problematic smartphone use, self-assessment, sense of coherence*

Introduction

Research sustains the mediating association between positive and negative mental health factors, such as socialization, self-expression, anxiety, and psychological pressure (Li et al. 2022, Devan et al. 2019). Self-perception, sense of

[1] Lecturer, PhD, "Dimitrie Cantemir" University from Târgu Mureș. Email csibimonika@yahoo.com
[2] Lecturer, PhD, George Emil Palade University of Medicine, Pharmacy, Science and Technology of Targu Mures. Email sandor.csibi@umfst.ro

coherence, and perceived social support influence a person's contextual adjustment and identification. (Rosenberg, M. 2015, Markus and Wurf 1987, Kammeyer-Mueller et al. 2009). Psychological needs such as security, autonomy, and personal connectivity influence self-image. Besides, self-worth is formed by autonomy and perceived approval by others (Ryan and So, 2022).

Studies reveal the role of Self components such as cognitions about the personal social context and assessment of stressors on problematic smartphone use and occurrence of behavioral symptoms of addiction (Blöte et al. 2019, Mehrizi et al. 2022). The interpersonal and social responsiveness moderated by self-esteem and problematic smartphone use through the continuous development of smartphone applications and social platforms (Chen et al. 2023, You et al. 2019). Modern devices are possible accession for different areas of life, shopping, social replies, health-related information, meeting plans, presentations, and educational issues (Song and Sela 2023, Liu et al. 2020). Within the construction of the Self, several psychological processes, such as the necessity of personal worth and variations in available social support, drive to pressure, irritability, and emotional burden (Li et al. 2022, You et al. 2019). Smartphone applications and concepts show differences in social interpersonally and personal integration, regulated by self-efficacy, age, and social environment (Busch and McCarthy 2021, Elhai et al. 2019, Coyne et al. 2019).

An increasing amount of research analyses the processes and mechanisms that can explain the occurrence and sustain of problematic smartphone use and how this phenomenon leads to the signs of behavioral addiction. Research in the field applied for a better understanding of the excessive smartphone use and mechanisms that lead to symptoms of behavioral addiction (Billieux, Maurage, Lopez-Fernandez, Kuss, and Griffiths 2015). Problematic smartphone use displays the same symptoms as a behavioral addiction, such as prominence, modification, mood, tolerance, withdrawal, conflict, and relapse, for example, within the symptomatology of internet addiction (Horwood and Anglim 2019, Chen et al. 2020, Monacis et al., 2021). Furthermore, factors increasing vulnerability to problematic smartphone use are associated with personality characteristics, emotional and aggression expression, and self-esteem levels (Billieux 2012).

Other results emphasize the presence of depressive symptoms and variations in sensation seeking associated with increased smartphone use (Augner et al. 2023, Csibi et al. 2021, Jo et al., 2021, Csibi and Csibi, 2023). It is worth mentioning that smart devices reduce anxiety and reinforce interpersonal relationships and virtual communication through social networking platforms among the young. Stressful situations and high expectations from the context might lead to isolation and

escaping gestures within virtual socialization (Riva et al., 2012; Scott, Stuart, and Barber, 2021). Furthermore, empirical research underlines the relevance of reinforcing self-control and effective coping strategies in young adults (Kammeyer-Mueller et al. 2009, Antonacci et al. 2021, Haber et al. 2007, Chan, 2012).

This study analyzes the associations between self-construction and problematic smartphone use in adult participants.

Research methodology

Participants

147 adults (age group 17-73, age M = 37.5) participated in our assessment voluntarily, in online form. At the initiation of the questionnaires, the participants gave written consent about their attendance at the study. The age groups numbers included were into categories: 18-26 (N=38, 25.9%), 27-35 (N=24, 16.3%), 36-45 (N = 44, 29.9%), and 46+ (N = 41, 27.9%) (Kail and Cavanaugh, 2019).

Materials and methods

In our study two questions about the knowledge of smartphone functions and the invested time were included:

– "How well do you know the functions of the smartphone and the different applications?" (the answer options were from 1-I'm a professional, I know all the settings well and can easily use all the new apps, 2-I know the functions of my device well, but sometimes I face challenges to solve, and 3-I try to use only the known apps because I need help with the settings), and

– "On average, how many hours a day do you use your smartphone to browse the internet?" (answer options: from 1 to 24).

We applied the following instruments:

- Core Self-Evaluation Scale (Judge et al., 2003), (CSES) assesses the level of self-esteem on a five-point Likert scale with answers ranging from (1) Strongly Disagree – (5) Strongly Agree. High scores denote a more positive core self-evaluation. In our sample, the scale showed good reliability (α Cronbach = 0.86).
- MOS-SSS Social Support Assessing Scale (Sherbourne & Stewart, 1991) assesses the degree of perceived acceptance and emotional support from the environment through its three subscales: emotional/ informational support, positive social interaction support, and Instrumental support. The scale

contains 20 items, with scores between 19 and 95; a higher score means stronger support. (α Cronbach = 0.81).

- Sense of Coherence Scale (Rahe & Tolles, 2002) is a 7-item instrument to measure the degree of organization of the psycho-emotional processes necessary for the behaviour consistent with personal experiences. Responses score their agreement with the item on a three-point scale (0,1,2), with high scores meaning a more increased sense of coherence. In our sample, the scale showed good reliability, α Cronbach = 0.77.
- Smartphone Application-Based Addiction Scale (Csibi et al., 2018) is a six-item instrument assessing the risk of occurrence for smartphone addiction symptoms. Participants indicate their agreement with each item from (1) strongly disagree to (5) strongly agree. The scale proved good reliability (Cronbach's alpha = 0.81).

For data analysis, we used IBM SPSS version 21 software. The procedure contains descriptive statistics, ANOVA, t-test, linear regression, and automatic linear modeling. (We assumed normal distribution scores.)

Results

Table 1 contains the distribution of the sample, depending on the variables tested (cross-tables, t-tests)

Table 1: Descriptive values of variables.

Variable		Gender			
		Man		Woman	
		N	% or M (SD)	N	% or M (SD)
Age group	18-26 or	8	5.4 %	30	20.4 %
	27-35 or	6	4.1 %	18	12.2 %
	36-45 years old	9	6.1 %	35	23.8 %
	46+ or	8	5.4 %	33	22.4 %
Using the App	Expert	7	4.8 %	9	6.1 %
	Mediate	19	12.9 %	68	46.3 %
	Beginner	5	3.4 %	39	26.5 %
Daily smartphone usage time	0-24 hours	31	4.12 (4.20)	116	4.53 (3.99)
Smartphone App-Based Dependency Scale (SABAS)	SABAS Total Score	31	17.35 (6.64)	116	15.16 (5.63)

Variable		Gender			
		Man		Woman	
		N	% or M (SD)	N	% or M (SD)
Basic Self-Assessment Scale (CSES)	Scorul total CSES	31	41.87 (9.26)	116	41.76 (6.96)
Coherence Sense Scale (SCS)	Scorul total SCS	31	16.90 (3.25)	116	17.59 (2.55)
Social Support Scale (MOS-SSS)	Scorul total MOS-SSS	31	87.83 (18.57)	116	92.28 (18.93)
	Emotional/informational support	31	33.41 (7.38)	116	34.37 (6.91)
	Positive support for social interaction	31	30.12 (6.72)	116	31.08 (5.61)
	Support instrumental	31	17.41 (3.22)	116	16.87 (3.85)

Data show a significant negative correlation between SABAS scores and Core Self-evaluation, and the sense of coherence reported by the participants (Table 2).

Table 2. Means, standard deviations and correlations between the analyzed variables (pair-sample correlation).

Self-related variables	Smartphone App-Based Dependency Scale (SABAS)				
	N	M	SD	Correlation	Sign.
Basic Self-Assessment Scale (CSES)	147	41,78	7,47	-,231	*,005*
The Scale of the Sense of Coherence	147	17,44	2,72	-,235	*,004*
Scala de sprijin social (MOS-SSS) Total scor	147	91,34	18,88	-,007	*,928*
Emotional/informational support	147	34,17	7,00	,059	*,481*
Positive support for social interaction	147	30,88	5,85	,001	*,989*
Support instrumental	147	16,98	3,72	,026	*,758*

Note: M - mean and SD - standard deviation. Meaning with two tails p<.05 considered.

Further, we performed automatic linear modeling on our variables for the identification of their predictive features. In the linear regression model (for the SABAS), we included as variables the gender, age group, scores on core self-evaluation, sense of coherence, and social support. The mode accuracy was 81.9 %.

The predictive role of the variables was examined using a stepwise method. The results show that the introduced variables were responsible for the prediction of a higher value on the "SABAS" scale in a proportion of 58.7% ($R2 = 0.344$, $F (2.210) = 9.048$, $p < 0.046$) (Figure 1).

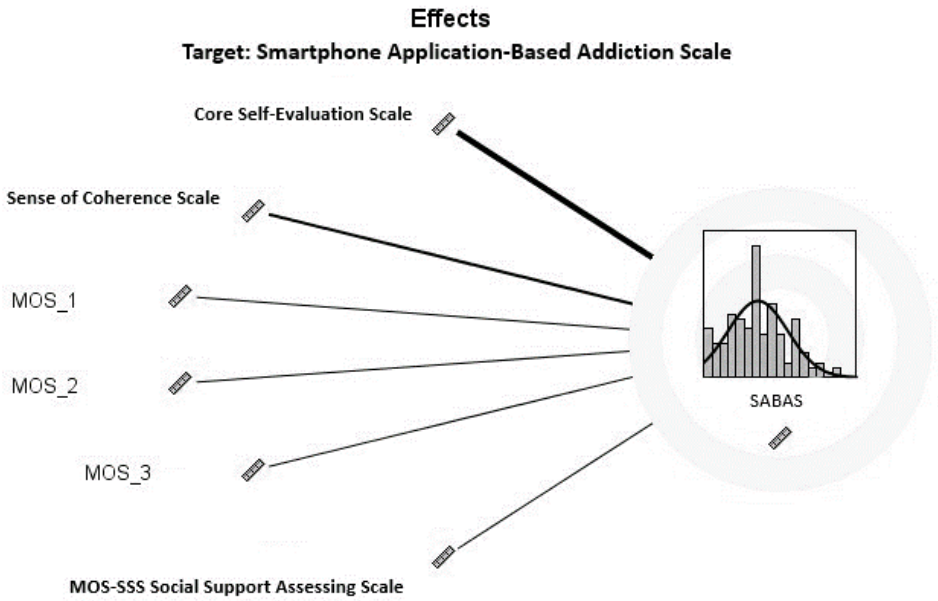


Figure 1. Automatic modeling of linear regression with the moderating role of self-esteem, sense of coherence and the presence of social support in terms of the risk of problematic smartphone use.

Automatic linear modelling shows that the highest moderating role for the risk of problematic smartphone use is exercised by core self-esteem, followed by a sense of coherence. We can argue that low scores on SABAS are mediated by high scores on self-esteem and a high sense of coherence.

Conclusion

This study focused on the personality components as the central Self-construct that might actuate problematic smartphone use.

The results show that participants who manifest increased familiarity with smartphone applications and spend increased time online scored higher on the problematic smartphone use scale. In our results, lower self-esteem showed a relationship with problematic smartphone use, and an increased sense of coherence showed a negative association with problematic smartphone use. Concerning the clinical cases, low self-esteem was associated with potentially addictive behaviour, analysing the personality and contextual-related characteristics determining problematic use and behavioural addiction (Fernandez et al., 2020).

In the present study, we didn't find a significant correlation between social self-image and the whole score of problematic smartphone use. These results can be

a good resource for understanding social interactions and excessive time investment in smartphone use or the use of distorted information. Besides, the effect of a person's age, self-image, sense of coherence, and general personality characteristics also influence the use modality of a smart device.

Researches emphasize that excessive social media application users show different socialization needs, their modality of attachment (such as lower avoidance and high anxiety attachment) influences mental health and well-being, and Instagram users consider important self-related manifestations, such as self-promotion and identity (knowing about other people and life-events, creativity, pictures, and photos) (Sindermann, Elhai, and Montag 2020, Rozgonjuk et al. 2020, Chemnad et al. 2023).

Meta-analytic studies confirmed a negative relevant association between self-esteem and the use of social media platforms (Saiphoo et al. 2020, Marino et al. 2018).

Subjective reports on problematic smartphone use can reflect personality-related aspects, such as self-image and appreciation, exteriority, the expressivity of feelings, and others. Furthermore, mental health can explain the PSU association with self-related psychological factors (Ryding & Kuss 2020, Twenge et al. 2021, Davidson et al. 2020).

Future directions would be to research a specified sample of the problem and know if someone is struggling with mental health issues or other illnesses that could influence smartphone use. The main target should be the comparative study of clinical and non-clinical samples. This mode will give us a better understanding of problematic smartphone usage and self-related concepts.

References

1. Antonacci AC, Patel V, Dechario SP, Antonacci C, Standring OJ, Husk G, et al. (2021). Self-assessment of core competencies improves critical review of complications and trust activities. J Surg Res; 257:221–6. https://doi.org/10.1016/j.jss.2020.07.064
2. Augner, C., Vlasak, T., Aichhorn, W., & Barth, A. (2023). The association between problematic smartphone use and symptoms of anxiety and depression – a meta-analysis. Journal of Public Health, 45(1), 193-201.
3. Augner, C., Vlasak, T., Aichhorn, W., & Barth, A. (2023). The association between problematic smartphone use and symptoms of anxiety and depression – a meta-analysis. Journal of Public Health, 45(1), 193-201.
4. Bert, F., Giacometti, M., Gualano, M. R., & Siliquini, R. (2014). Smartphones and Health Promotion: A Review of the Evidence. Journal of Medical Systems, 38, 1-11.

5. Beutel, M. E., Braehler, E., Glaesmer, H., Kuss, D. J., Woelfling, K., & Mueller, K. W. (2011). Regular and problematic use of the Internet in leisure time in the community: results of a survey based on the German population. Cyberpsychology, Behavior, and Social Networks, 14(5), 291-296. doi:10.1089/cyber.2010.0199.
6. Billieux, J. (2012). Problematic Mobile Phone Use: A Literature Review and Pathways Model. Current Psychiatric Reviews, 8(4), 299-307.
7. Billieux, J., Maurage, P., Lopez-Fernandez, O., Kuss, D. J., & Griffiths, M. D. (2015). Can disordered mobile phone use be considered a behavioral addiction? An update of current evidence and a comprehensive model for future research. Current Addiction Reports, 2(2), 156-162.
8. Blöte, A. W., Miers, A. C., Van den Bos, E., & Westenberg, P. M. (2019). Negative Social Self-Knowledge: How Shyness Can Lead to Social Anxiety. Journal of Applied Developmental Psychology, 63, 9-15. https://doi.org/10.1016/j.appdev.2019.05.003
9. Bradshaw, E. L., Sahdra, B. K., Ciarrochi, J., Parker, P. D., Martos, T., & Ryan, R. M. (2021). A Configurative Approach to Aspirations: The social magnitude of aspiration profiles predicts well-being beyond the intrinsic and extrinsic aspirations that comprise the profiles. Journal of Personality and Social Psychology, 120(1), 226.
10. Busch, P. A., & McCarthy, S. (2021). Antecedents and consequences of problematic smartphone use: a systematic literature review of an emerging research field. Computers in Human Behavior, 114, 106414.
11. Casale, S., Fioravanti, G., Benucci, S. B., Falone, A., Ricca, V., & Rotella, F. (2022). A meta-analysis of the association between self-esteem and problematic smartphone use. Computers in Human Behavior, 134, 107302.
12. Chan, D. K. C. (2012). Integration of social psychological theories of motivation and intention to explain health and safety behaviours (PhD thesis, University of Nottingham).
13. Chemnad, K., Aziz, M., Belhaouari, S. B., & Ali, R. (2023). The interaction between social media use and problematic internet use: four behavioural patterns. Heliyon, 9(5).
14. Chen C, Shen Y, Lv S, Wang B, Zhu Y. (2023). The relationship between self-esteem and cell phone addiction among students: the chain mediating effects of social avoidance and peer relationships. Front Psychol. 13;14:1137220. doi:10.3389/fpsyg.2023.1137220. PMID: 37123288; PMCID: PMC10134861.
15. Chen, I. H., Pakpour, A. H., Leung, H., Potenza, M. N., Su, J. A., Lin, C. Y., & Griffiths, M. D. (2020). Comparison of generalized and specific problematic smartphone/internet use: longitudinal relationships between smartphone application-based addiction and social media addiction and psychological distress. Journal of Behavioral Addictions, 9(2), 410-419.
16. Chen, W., Yang, T., & Luo, J. (2022). Basic self-assessment and subjective well-being: a moderate mediation model. Frontiers in Public Health, 10, 1036071.
17. Coyne, S. M., Stockdale, L., & Summers, K. (2019). Problematic mobile phone use, depression, anxiety and self-regulation: evidence from a three-year longitudinal study from adolescence to emerging adulthood. Computers in Human Behavior, 96, 78-84.
18. Csibi, S., & Csibi, M. (2023). Exploring associations between personality self-structure and problematic smartphone use in a sample of adults. European Psychiatry, 66(S1), S984-S984.

19. Csibi, S., Griffiths, M.D., Cook, B., Demetrovics, Z., & Szabo, A. (2018). Psychometric properties of the Smartphone App Based Addiction Scale (SABAS). International Journal of Mental Health and Addiction, 16(2), 393-403.
20. Csibi, S., Griffiths, M. D., Demetrovics, Z., & Szabo, A. (2021). Analysis of problematic smartphone use in different age groups within the "addiction component model". International Journal of Mental Health and Addiction, 19, 616-631.
21. Davidson, B. I., Shaw, H., & Ellis, D. A. (2020). Unclear constructions in evaluation: The overlap between mental health and technology "use.". Open Science Framework.
22. Devan H, Farmery D, Peebles L, Grainger R. (2019). Evaluation of support functions for self-management in applications for people with persistent pain: systematic review. JMIR Mhealth Uhealth, 7(2):e13080
23. Elhai, J. D., Levine, J. C., & Hall, B. J. (2019). The relationship between the severity of anxiety symptoms and problematic smartphone use: a review of the literature and conceptual frameworks. Journal of Anxiety Disorders, 62, 45-52.
24. Fernandez, D. P., Kuss, D. J., & Griffiths, M. D. (2020). Effects of Short-Term Abstinence in Potential Behavioral Addictions: A Systematic Review. Review of Clinical Psychology, 76, 101828.
25. Haber, M.G.; Cohen, J.L.; Lucas, T.; Baltes, B. (2007). The Relationship Between Social Support Received and Self-Reported Perceived: A Meta-Analytic Review. Am. J. Community Psychol., 39, 133–144. https://doi.org/10.1007/s10464-007-9100-9
26. Hagger, M. S., & Chatzisarantis, N. L. (2011). Causal guidelines moderate the undermining effect of rewards on intrinsic motivation. Journal of Experimental Social Psychology, 47(2), 485-489.
27. Horwood, S., & Anglim, J. (2019). Problematic smartphone use and subjective and psychological well-being. Computers in Human Behavior, 97, 44-50.
28. Jo, S., Baek, I. C., Fava, M., Mischoulon, D., Hong, J. P., Kim, H., ... & Jeon, H. J. (2021). Associating excessive smartphone use with depression, anxiety, and other addictive behaviors: a national community sample of Korean adults. Research in Psychiatry, 304, 114133.
29. Judge, T. A., Erez, A., Bono, J. E. and Thoresen, C. J. (2003). Basic Self-Assessment Scale: Developing a Measure. Personnel Psychology, 56(2), 303-331.
30. Kail, R. V., & Cavanaugh, J. C. (2019). Human development: a perspective on the duration of life. 8th. Boston, MA, USA, Cengage Learning, Inc.
31. Kammeyer-Mueller, J. D., Judge, T. A. & Scott, B. A. (2009). The role of basic self-assessments in the adaptation process. Journal of Applied Psychology, 94(1), 177. https://doi.org/10.1037/a0013214
32. Kasser, T. & Ryan, R. M. (1996). Further examination of the American dream: differential correlations of intrinsic and extrinsic goals. Personality and Social Psychology Bulletin, 22(3), 280-287.
33. La Guardia, J. G., Ryan, R. M., Couchman, C. E. and Deci, E. L. (2000). Variation within the person in attachment security: a perspective of the theory of self-determination on attachment, fulfillment of needs and well-being. Journal of Personality and Social Psychology, 79(3), 367.

34. Li, Y., Wang, Z., You, W., et al. (2022). Basic Self-Assessment, Mental Health, and Mobile Phone Addiction in Chinese High School Students: Why We Should Care. Ital J Pediatr 48, 28. https://doi.org/10.1186/s13052-022-01217-6
35. Li, Y., Wang, Z., You, W., & Liu, X. (2022). Basic Self-Assessment, Mental Health, and Mobile Phone Addiction in Chinese High School Students: Why We Should Care. Italian Journal of Pediatrics, 48(1), 28.
36. Liu, Q., Huang, J., & Zhou, Z. (2020). Smartphone self-expansion and the trend of smartphone addiction among adolescents: a moderate mediation model. Review of Children and Youth Services, 119, 105590.https://doi.org/10.1016/j.childyouth.2020.105590.
37. Marino, C., Gini, G., Vieno, A., & Spada, M. M. (2018). A comprehensive meta-analysis of problematic use of Facebook. Computers in Human Behavior, 83, 262-277.
38. Markus, H. (1983). Self-knowledge: an extended vision. Journal of Personality, 51(3), 543-565.
39. Markus, H. & Wurf, E. (1987). The concept of the dynamic self: a social psychological perspective. Annual Review of Psychology, 38(1), 299-337.
40. Martela, F., Bradshaw, E. L., & Ryan, R. M. (2019). Expanding the Map of Intrinsic and Extrinsic Aspirations Using Network Analysis and Multidimensional Scaling: Examining Four New Aspirations. Frontiers in Psychology, 10, 2174.
41. Mehrizi, S.H.A.A., Amani, O., Feyzabadi, A.M., et al. (2022). Emotion regulation, negative self-assessment and symptoms of social anxiety: the mediating role of depressive symptoms. Current Psychol, 1-11. https://doi.org/10.1007/s12144-022-03225-5
42. Moller, A. C., Friedman, R. and Deci, E. L. (2006). A self-determination theory perspective on the interpersonal and intrapersonal aspects of self-esteem. Problems and Answers of Self-Esteem: A Source of Current Perspectives, (pp.188-194).
43. Monacis, L., Griffiths, M. D., Limone, P., & Sinatra, M. (2021). Risk of social media addiction between ideal/false and true self: Testing a path model through the person-centered tripartite perspective of authenticity. Telematics and Informatics, 65, 101709.
44. Moody EJ. (2001) The use of the Internet and its relationship with loneliness. CyberPsychology & Behavior; 4:393–401.
45. Rahe, R. H. & Tolles, R. L. (2002). The Stress and Coping Brief Inventory: A Useful Stress Management Tool. International Journal of Stress Management, 9, 61-70.
46. Riva, G., Baños, R. M., Botella, C., Wiederhold, B. K., & Gaggioli, A. (2012). Positive technology: the use of interactive technologies to promote positive functioning. Cyber Psychology, Behavior, and Social Networks, 15(2), 69-77.
47. Rozgonjuk, D., Pruunsild, P., Jürimäe, K., Schwarz, R. J., & Aru, J. (2020). The frequency of Instagram use is associated with problematic smartphone use, but not with depression and the severity of anxiety symptoms. Moving Media and Communications, 8(3), 400-418.
48. Ryan, R. M., & So, E. L. (2017). Theory of self-determination: basic psychological needs in motivation, development and well-being. New York, USA, Guilford Publications.
49. Ryan, R. M., & So, E. L. (2022). Theory of self-determination. In the Research Encyclopedia of Quality of Life and Well-Being (pp. 1-7). Cham: Springer International Publishing House.

50. Ryding, F. C., & Kuss, D. J. (2020). Passive objective measures in the evaluation of problematic smartphone use: a systematic review. Reports on Addictive Behaviors, 11, 100257.
51. Saiphoo, A. N., Halevi, L. D., & Vahedi, Z. (2020). The Use of Social Networking Sites and Self-Esteem: A Meta-Analytic Review. Personality and Individual Differences, 153, 109639.
52. Sarason, B.R.; Sarason, I.G.; Pierce, G.R. (Eds.) (1990). Traditional views on social support and their impact on evaluation. In Social Support: An Interactional Vision (pp. 9-25); Wiley-Interscience: New York, NY, USA;.
53. Scott, R. A., Stuart, J., & Barber, B. L. (2021). Contemporary friendships and social vulnerability among young people: understanding the role of online and offline interaction contexts in the quality of friendship. Journal of Social and Personal Relations, 38(12), 3451-3471.
54. Sherbourne, C. D. & Stewart, A. L. (1991). MOS Social Support Survey. Social Sciences and Medicine, 32(6), 705-714.
55. Sindermann, C., Elhai, J. D., & Montag, C. (2020). Predicting Trends to Disorderly Use of Facebook Social Media Platforms: On the Role of Social Personality, Impulsivity, and Anxiety. Research in Psychiatry, 285, 112793.
56. Song, C. E. and Sela, A. (2023). The phone and the self: how smartphone use increases the preference for uniqueness. Journal of Marketing Research, 60(3), 473–488. https://doi.org/10.1177/00222437221120404
57. Thomée, S., Härenstam, A., & Hagberg, M. (2011). Mobile phone use and stress, sleep disturbances and symptoms of depression among young adults - a prospective cohort study. BMC Public Health, 11, 1-11.
58. Twenge, J. M., Haidt, J., Blake, A. B., McAllister, C., Lemon, H., & Le Roy, A. (2021). Worldwide the loneliness of adolescents is increasing. Journal of Adolescence, 93, 257-269.
59. Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. (2004). Motivation of learning, performance and persistence: synergistic effects of the intrinsic content of objectives and contexts to support autonomy. Journal of Personality and Social Psychology, 87(2), 246.
60. Weinstein, N., & Ryan, R. M. (2011). An approach to self-determination theory for understanding incursion and stress responses. Stress and Health, 27(1), 4-17.
61. You Z, Zhang Y, Zhang L, Xu Y, Chen X. (2019). How does mobile phone addiction affect self-esteem? The mediating role of social anxiety and interpersonal sensitivity. Psychiatric Research, 271:526-531. doi:10.1016/j.psychres.2018.12.040. Epub 2018 Dec 6. PMID: 30553099.
62. You, Z., Zhang, Y., Zhang, L., Xu, Y., & Chen, X. (2019). How does mobile phone addiction affect self-esteem? The mediating role of social anxiety and interpersonal sensitivity. Psychiatric Research, 271, 526-531.

E-Twinning Projects: International Cooperation, a Different Way of Learning Foreign Languages

Teodora BOAR[1]

Abstract. *This article highlights learning opportunities beyond those offered in the classroom, specifically those available in a world just a click away—eTwinning projects, which have a 20-year history. The information presented is the result of the implementation of several projects at the* Colegiul Național Unirea *in Târgu Mureș, which have been awarded both National and European Quality Labels.*

Keywords: *eTwinning, projects, learning opportunities, National College Unirea, Quality Labels, education*

2025 marks 20 years since the international implementation of the eTwinning initiative. National College "Unirea" has been actively engaged in eTwinning projects, being registered on the European platform since 2011, now ESEP. Over the past five years, the school has implemented seven linguistic projects in internationally spoken languages such as English, German, and French. These online projects aim to unite schools across Europe, raising awareness about the critical role education plays in shaping the younger generation and beyond.

Over time, eTwinning has grown into the largest "teachers' lounge" in the world, effectively and equitably fostering creativity, critical thinking, and practical skills. The eTwinning classroom is embodied in TwinSpace, where students find opportunities for learning, personal development, socialization, and reflection. This journey began at the end of 2019, seemingly anticipating the global challenges ahead—the pandemic and subsequent lockdowns over the next two years.

The first project, *"Web 2.0 Tools in Teaching and Learning German,"* focused on developing German language skills at the A1 level, complemented by much-needed improvement in digital competencies. This proved invaluable when schools

[1] Prof., National College "Unirea" Târgu Mureș

transitioned to online learning during the COVID-19 pandemic, offering students a significant advantage. Indeed, it seems that nothing happens by chance.

The project encouraged creativity and responsible learning through activities like choosing discussion topics, designing posters to reflect project objectives within the partnership, and creating the project logo via a student competition with voting. Students also developed e-book presentations and linguistic learning games on various themes, working in mixed teams through platforms like Kahoot, Wordwall, LearningApps, and Liveworksheets—tools that encourage interactive, mobile, and responsible language learning.

Webinars brought students and teachers closer during the pandemic, providing opportunities to share unique learning experiences. Digital media further enhanced the project's visibility through a Facebook page, blog, and shared eBook.

The meticulous planning and dedication of participants—10th-grade students specializing in natural sciences with intensive German—resulted in optimal collaboration. The project was a success for both students and teachers, who gained a methodological and didactic framework easily applicable in the classroom.

Subsequent projects tackled pressing educational topics, such as *NATUR - Natur, Abfall, Tiere, Umwelt, Regenerierung* (Nature, Waste, Animals, Environment, Regeneration), focusing on transversal skills related to environmental protection. These projects raise awareness about humanity's impact on the environment and explored solutions to reduce pollution. Students recognized how every action impacts not only the environment but also personal health: a healthy Earth ensures a healthy humanity.

In 2021-2022, the challenges expanded with two projects: *"Let's Get Connected"* and *"Sprach und Kulturaustausch beim Deutschlernen"* (Language and Cultural Exchange in Learning German).

"Let's Get Connected" was a complex project promoting interculturality and cultural diversity, conducted in partnership with schools from Poland, Turkey, and Greece. The project fostered students' creativity, emphasizing multiculturalism, international friendships, and exploring themes resonating with youth—student life, interests, traditions, customs, and tourist attractions in their home countries.

The novelty lay in its bilingual approach, using both English and German, which reinforced its intercultural nature. Students practiced both languages through various themes, supported by digital tools. Presentations, posters, video clips, and interactive digital games were created, highlighting creativity, respect for shared values, and mutual understanding.

The *"Sprach und Kulturaustausch beim Deutschlernen"* project emphasized shared values, offering 10th-grade natural sciences students (intensive English) the chance to explore and communicate in German at a beginner level. Supported by digital tools, students discovered cities, countries, customs, recipes, and traditions, motivating their German learning and allowing them to promote the image of their home country through their projects.

Over the past two years, we also focused on German culture and literature, which is less accessible to students. The stories of the Brothers Grimm were transformed into animations, making them engaged and more relatable.

All these projects have been recognized with the National Quality Certificate at the national level and the European Quality Certificate at the European level, confirming their excellence. Thanks to these efforts, our college has been awarded the title of *eTwinning European School*, a distinction that highlights the quality of work carried out over the past five years.

As an *eTwinning European School*, we bear the responsibility of promoting the educational values and principles of the European Commission, as part of Erasmus+, the EU program for Education, Training, Youth, and Sport.

What is the benefit of participating in such projects?

First and foremost, students' self-confidence grows as they realize that other students are traveling the same path, inhabiting similar worlds, and sharing the same interests. They also learn that carrying out a project requires a great deal of discipline, organization, and adherence to deadlines.

Additionally, the skills they acquire in digital preparation, an ever-evolving field—combined with their linguistic competencies, remain invaluable. As we know, German is not the easiest language to learn, so every opportunity for language contact plays a crucial role in the process of language acquisition.

All these aspects add significant value to the education and development of our students, shaping them into the personalities of tomorrow.

References

1. https://etwinning.ro
2. https://school-education.ec.europa.eu/en

FACTS VET FORCE. 2023-2-ES01-KA210-000183017

Cristiana CHIRA[1]

Abstract. *The project emphasizes the need for an integrated approach to reduce the effects of fake news. It is essential to develop both technological solutions and educational programs that cultivate critical thinking and discernment.*

Keywords*: European project, Erasmus, fake news, disinformation, partnership.*

Our motivation for this project is clear and pressing. In today's era of digital immediacy and heightened political confrontation, it's imperative for VET students to be equipped with transversal and critical digital skills to handle digital threats and to understand how to counteract the spread of fake news, deep fakes and disinformation for the healthy evolution of our democracies.

The aim of the FACTS VET force is to upskill VET teachers regarding the post-truth era, disinformation, deep fakes and fact checking.

This will empower them to equip their VET students with transversal and critical digital skills, enabling them to safely navigate the online realm, discern misinformation, and actively participate in our society to foster civic engagement and European values.

Target Groups

- VET teacher's and trainers
- VET students 16 to 19 years.
- VET schools
- VET directors
- Civil society organizations
- Policy makers

[1] Prof., Asociația pentru inovare și valorizare în educație (AIVE).

Project results

- A1. Management
- A2. FACTS VET Force Booklet
- A3. FACTS VET Force Competition
- A4. FACTS Final Dissemination events and website

Priorities of the project

Inclusion Dimension: Improving the outreach to people with fewer opportunities while valorizing the diversity as a positive source of learning

Digital Dimension: Digital technologies in education; European school education platform

Environmental Dimension: Memorandum of understanding

FACTS VET FORCE Booklet

The FACTS VET Force Booklet was tailored for VET teachers, trainers and students. It addressed critical issues like the post-truth era, disinformation, and practical approaches to fact-checking and AI platforms in an innovative, engaging and attractive way. The booklet incorporate fresh methodologies and non-formal educational activities aimed at equipping VET students and the transversal and essential critical digital skills needed to thrive in the digital age.

The booklet consolidate various existing fact-checking and IA platforms and provide practical guidance on how to integrate them into the daily lives of VET Institutions. Drawing from the lessons learned in previous projects, it compiles the best practices for combating disinformation, using fact-checking platforms and AI to promote common values, civic engagement, and student participation.

The content of the booklet

Module1: Combatting disinformation, deep fake and misinformation through media literacy

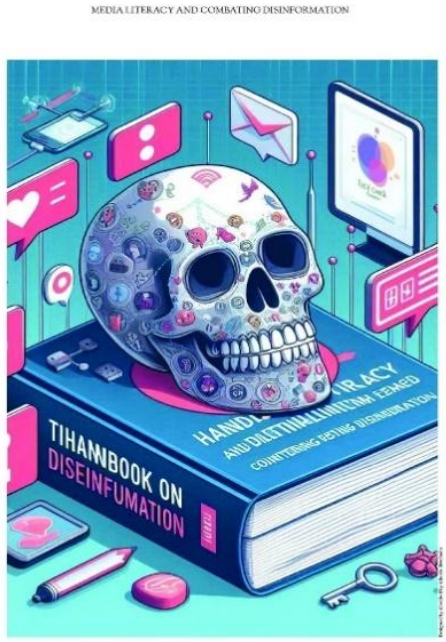
Module 2: Fact-checking and IA platforms and tools: How to effectively use them

Module 3:Social media verification: Assessing sources and evaluating visual content in the age of immediacy

Module 4: Media literacy in the classroom

Module 5: Developments in the EU regarding digital literacy, deep fake and disinformation related to VET education and training

Module 6: Combating digital abuse.



20

The model can cross-reference claims with reliable sources to verify their accuracy.

- Knowledge Base Updates: Continuously update the LLM's knowledge base with current and authoritative information to ensure it has the most accurate context for comparison. There are some techniques like RAG or Fine Tuning.

3. Contextual Analysis

- Source Reliability: Use the LLM to assess the credibility of the sources. The model can analyze the reputation and reliability of the publishing sources and flag those with questionable credentials.
- Contextual Understanding: Ensure the LLM understands the context in which information is presented. Misinformation can be subtle and context-specific, requiring a nuanced understanding.

4. Automated Detection

- Anomaly Detection: Implement algorithms that use the LLM's output to detect anomalies or deviations from established facts. This includes flagging unusual patterns or deviations from normatively accepted information.
- Pattern Matching: Use machine learning techniques to match patterns of known misinformation, such as misleading phrasing or recurring false narratives.

5. Transparency and Explainability

- Provide Explanations: Ensure that the LLM can provide clear explanations for its assessments. This helps users understand why certain content was flagged as potentially misleading.
- Transparency in Model Decisions: Implement mechanisms that allow users to see how decisions were made, including the sources and data the LLM used for verification.

6. Ethical Considerations

- Bias Mitigation: Regularly assess and mitigate biases in the LLM to ensure it doesn't disproportionately flag certain viewpoints or sources unjustly.
- Privacy and Security: Ensure that the use of LLMs for misinformation detection respects user privacy and adheres to data protection regulations.

21

FACTS VET Force Competition

The A3 component of the FACTS project involves organizing the FACTS VET Force Competition a three-day event where various VET students (four per country) from the partner countries will collaborate to acquire knowledge about the post-truth era, disinformation, deep fake concepts and the use AI and fact-checking .

In the realm of digital literacy, VET students will design creative awareness campaigns collaborating in European teams that will be shared with their peers at the national level. VET teachers will guide students throughout this process, using the previously produced Booklet. International collaboration will be a focal point, as VET students will engage with their peers from other countries through various activities and workshops aimed at enhancing their critical digital skills and transversal competences.

Agenda

First day:

The role of fact-checking in the fight disinformation in times of crisis - presentation - João Begonha, journalist;

The Impact of Algorithms on the Spread of Disinformation: How to Filter the Noise? – presentation - Soraia Rodrigues, psychologist;

Digital literacy as a tool of combating disinformation – presentation - Vera Moreira, trainer;

Deepfakes: ethics and technical challenges in the age of digital manipulation – presentation - José Castillo, AI expert;

Second day:

Competition: Developing creative ideas for awareness - Alberto Brochado.

Third day:

Presentation of campaigns

The premiere.

The results of the project emphasize that only through a collective effort, supported by innovation and education, can the impact of misinformation be limited. It is essential that education continues to invest in prevention initiatives, strengthen regulations on online content and encourage active participation of citizens in the process of protecting the truth.

References

1. Erasmus+ project FACTS VET Force, 2023-2-ES01-KA210-000183017.

CRED@Cooperation, Reformation, e-Training, and Digitalization. Project no. 2023-1-ro01-ka121-sch-000133626

Carmen Ana TOT[1]

Abstract. *The purpose of this article ist o present some aspects related to the project "CRED@Cooperation, Reformation, e-Training and Digitalization", an Erasmus+project, no. 2023-1-RO01-KA121-SCH-000133626 of the Economic College "Transilvania" from Târgu Mureș and to highlight some of the benefits that the implementation of such projects bring not only to the direct beneficiaries, but also to the indirect ones, the school unit and the community.*

Keywords*: Erasmus+projects, objectives, benefits*

Threats. Needs. Challenges

In 2022, the project team of the Economic College "Transilvania" from Târgu Mureș took note of several problems considered threats to an educational act of quality, threats that had been recorded in the "Report on the state of education in Economic College "Transilvania" from Târgu Mureș for the school year 2021-2022", among which we mention: "the special pandemic and social situation", "a decrease in the parents' financial situation", "the absence of a planned budget allocated to training at the level of school units", "the routine, supported by the poor motivation of some teachers to achieve the professional standard" and "the maintenance of a worrying rate of absenteeism among the students." During the same period and having as sources various reports, SWOT analyses, questionnaires provided by different committes from our school, the project team identified several needs such as: 1) the need for teachers to acquire skills in using the new informational technologies in order to connect to the students'interest in technology, to their

[1] Prof., "Transilvania" Economic College, Târgu Mureș.

digital intuition; 2) the need to improve the teachers' linguistic and intercultural skills so that the educational act should be carried out respecting the cultural identity of each student and the future projects and international projects should help in implementing models of good practices, in connecting our college to innovation, digitalization and the values of the European education; 3) the need to create a school environment that promotes equity and inclusion by developing modern educational practices, adapted to all the students in order to develop the inclusive dimension by ensuring optimal conditions for the educational process for all students and 4) the need to create a learning strategy adapted to the 21st century, by developing activities and initiating course programs on topics that incorporate themes like: economic and social sustainability, climate change, green energy and circular economy.

In response to the threats and needs mentioned above, the project team of the Economic College "Transylvania" offered the Erasmus Plan for school education, more precisely an Erasmus project entitled "CRED@Cooperation, Reformation, E-formation and Digitalization."

By writing this project, the project team aimed at bringing a new breath to the school unit, as it met the needs of the college, was in line with the priorities established at the European level regarding inclusion, diversity, equal opportunities, non-discrimination and aimed at providing quality education for all the students of the college. The Economic College" Transilvania" received an Erasmus accreditation for the period 01.03.2023-31.12.2027.

The project CRED@Cooperation, Reformation, E-formation and Digitalization, Key action Erasmus+, School Education, No. 2023-1-RO01-KA121-SCH-000133626

The school year 2023-2024 was the first year of implementation of the project "CRED@Cooperation, Reformation, E-formation and Digitalization", project that aims at achieving four major objectives, namely: 1) increasing the level of knowledge of modern educational methods and tools for digital transformation by adapting the teaching act to the current educational requirements; 2) improving the teachers' and students' communication skills in different foreign languages in order to strengthen the European dimension of learning and the understanding of other cultures; 3) creating a school environment that promotes equity and inclusion by developing modern educational practices, adapted to all the students of the college and 4) increasing the participation in activities on topics that incorporate

transnational realities: economic and social sustainability, climate change, circular economy and green energy.

With the stated aim of achieving these objectives, the project team offered to six teachers from the college the opportunity to participate in three training courses abroad, courses whose programs were to contribute to improving the digital and the English language skills of the participants: 1) "ICT FOR Education: Digital and web tools for an effective blended, flipped and effective learning" (26.02.-01.03.2024, Padua, Italy), 2) "Advanced Methods and Practices for Foreign Language Teachers" (11.03-16.03.2024, Budapest, Hungary) and 3) "Artificial Intelligence for Education: Exploring the Frontiers of ITC" (08.04-13.04.2024, Gent, Belgium).The students of our college were the beneficiaries of two group mobilities: 19 students accompanied by four teachers, participated in various activities, tailored to the project objectives, in two partner schools, in Manavgat Borsa Istanbul Mesleki ve Teknil Anadolu in Manavgat, Antalya, Turkey during the period 11.03.-15.03.2024, and in Accademmia Risorgimento in San Benedetto del Tronto, Italy, during the period 22.04.-26.04. 2024.

Part of the Erasmus Plan proposed by the project team to the direct beneficiaries was also the organization of activities through which, after their return home, the knowledge and skills acquired would be valued. Thus, on the one hand, didactic projects were developed in different subjects and then materialized in lessons held in classes, narrative reports were written in which the emphasis was placed on the experience lived by the beneficiaries, an auxiliary textbook entitled "Environmental Protection" for the 10th grade was created, articles were written and published and questionnaires were completed. On the other hand, the project team offered to all the students of our college the chance to get involved, together with the direct beneficiaries of the group mobilities, in extensive and diverse activities such as: planting 200 poplar, ash and willow saplings in Glodeni, Mureș County (40 students and five teachers), "Back to school/Back to university", an activity carried out through the goodwill of a person authorized by the European Parliament to inform and dialogue with the students of our college on various aspects related to the right to vote (95 students participating in the event), the project "Thinking Green", addressed to the students 9th-12th and carried out over two months, celebrating World Environment Day by giving presentations and by creating works like a panel with drawing on topics related to the importance of the environment, products obtained from recycled materials, personalized clothing items with images about the environment.

All the activities carried out, both those for the direct beneficiaries of the group mobilities, included in the Learning Programs and carried out in cooperation with the partner schools, and those for all the students of our college, aimed to achieve the four objectives of the project "CRED@Cooperation, Reformation, E-formation and Digitalization".

Benefits

Quantifying the impact of all the beneficiaries' participation in these courses and group mobilities, we find that, during the first year of the project implementation, 29 teachers and students had the chance to develop or improve their practical knowledge, to practise and develop their English language skills, to improve their digital skills, to offer and be inspired by good practice models and, last but not least, to create connections. In the case of the teachers who benefited from training courses, improving their digital skills by learning new teaching and assessment methods using various applications, led to the stimulation and the enhancement of the students' creativity and critical thinking, while for the students who participated in the group mobilities, through the activities from the Learning Programs carried out during the group mobilities, which combined the two types of education, formal and informal, all the four objectives were achieved, the resulting benefits being not only the practise and improvement of the beneficiaries' digital and linguistic skills, but also the accumulation of new information about environmental, climate and sustainability issues, about the European Union and European values, the acquisition of a better understanding of diversity in a society and a growing interest in using digital technology in their studies. The fact that 10 out of 19 students who participated in the group mobilities were "participants with reduced opportunities" (coming from rural areas or orphans) is an indicator of our desire to be a college that promotes equity and inclusion. A gratifying fact, noted at the college level, was the increasing involvement of our students in the English language competitions: the National English Language Olympiad-the school phase, the translation competition "Plurilingvism", the speech contest "Papiu Talks", the inter-county competition "The Technology of the European Day of Languages". Regarding the 12th graders of our college, the number of those who obtained a Cambridge diploma increased, while some students chose to use the Canva application when writing their paper to obtain a certificate that certifies their professional skills. It was also noteworthy the way in which the students benefiting from the group mobilities, belonging to different classes, learned to work in a team

or in a group both at home, while creating the materials that were to be presented at the partner schools, and in the mixed teams created in the partner schools, the benefits of this thing being a higher quality of the presentations, an increased efficiency in achieving the objectives and a closer connection between them.

Dissemination of the project

The ways in which the members of the project team, together with the direct beneficiaries and the project partners, disseminated the information about the project „CRED@Cooperare, Reformare, E-formare și Digitalizare" (objectives, activities, results, etc), about the beneficiaries' experience lived abroad, were varied, from presentations made by the students and teachers at different professional events, to newspaper articles, narrative reports, lesson plans, minutes of different activities on our college's site, to materials posted on our direct beneficiaries' and partners' Facebook pages and on two noticeboards in our school.

The participation of some teachers and students, direct beneficiaries of the project "CRED@Cooperation, Reformation, E-formation and Digitalization" at the International Conference "The Impact of Digitalization and Artificial Intelligence on the Development of Post-Modern Society", conference held on 25-26 November, 2024 under the auspices of the "Dimitrie Cantemir" University in Târgu Mureș, added to the possibility of disseminating this project extra value due to the exchange of good practices gained, as the participants of our college listened to a number of 22 presentations made by university professors and experts from Romania and abroad, by teachers and teams of students from the high schools from the Mureș county. Among the presentations we listened to, it is worth mentioning a few that aroused our interest, as some offered us, through the information provided, ideas for designing and carrying out future activities while others, through their authors, opened the way to future partnerships: "Bridging generations with AI: Creative Fusion of Art, Storytelling and Digital Collaboration" (author Ana Maria Solis, Expert EU Projects, SOLIS SRL, Italy), „Innovation in Education through Artificial Intelligence. Experiences within Erasmus Mobility at the University of Nysa" (authors PhD, associate professor Maria Oroian, PhD, associate professor Sorina-Mihaela Bălan, PhD, university professor Brândușa Gorea, PhD, associate professor Sorana Bucur, PhD, lecturer Anca Viorica Bogdan, PhD, lecturer Eniko Papp, PhD, lecturer Radu Negru, "Dimitrie Cantemir" University from Târgu Mureș), "e-Twinning projects> International Cooperation, a Different Way of Learning Foreign Languages" (author teacher Teodora Boar, The National College" Unirea", Târgu

Mureș), "Facts VET Force", no. 2023-2-ES01-KA210-000183017 (author teacher Cristiana Chira, Association for Innovation and Valorization in Education), „Erasmus+ Open Minds for Real Needs and Full Rights" and the project "Step by Step towards Successful Inclusion" (authors teacher Anișoara Moga and teacher Csilla Peterffy).

Writing and then implementing an Erasmus+ project involves the hard work of a team, but when the benefits obtained on multiple levels outweigh the inevitable impediments or shortcomings that such work entails, the hard work demands to be continued. Because our college's expectations are high and we believe King Ferdinand I was right to say that "it is not the walls that make a school, but the spirit that reigns within it."

References

1. Tot, C. A. (2024). *CRED@Cooperation, Reformation, E-Training, and Digitalization* (Project No. 2023-1-RO01-KA121-SCH-000133626). *Economic College "Transilvania," Târgu Mureș, Romania*. Unpublished internal report and project overview.

ERASMUS+ Project "Open Minds to Real Needs and Full Rights" – 2024-1-ro01-ka121/122-sch-000206841. Inclusion for Students with Special Needs and General Sexual Education

MOGA Anișoara[1], PÉTERFFY Csilla[2], MOLDOVAN Erzsébet[3], SZÖVÉRFI Karolina[4], ZSEMBERA Éva[5]

Abstract. *Sexual education tailored to students with special educational needs (SEN) is essential in fostering inclusivity and equipping neurodiverse individuals with critical life skills. The neurodiversity paradigm recognizes neurological differences, such as autism, ADHD, and dyslexia, as natural variations that enrich humanity. This perspective underscores the importance of adapting education to address the unique cognitive and emotional needs of neurodiverse students (Singer, 1999; Armstrong, 2010). For SEN students, sexual education provides tools to navigate physiological changes, understand personal boundaries, and cultivate respectful relationships. Structured and individualized approaches help overcome challenges like abstract concepts, societal stigma, and the lack of teacher training (Asztalos, 2020; Neamțu, 2022). However, the digital age presents heightened risks, with neurodiverse students more susceptible to digital sexual abuse due to limited social awareness, emotional vulnerabilities, and challenges in recognizing predatory behavior. Common risks include grooming, coercion, and exploitation within gaming environments. Artificial Intelligence (AI), while amplifying some threats, also offers protective solutions. AI systems can monitor online activity, provide personalized education on online safety, and offer virtual counseling (Boyd, 2020). A collaborative, ethically guided approach that integrates AI and embraces neurodiversity can bridge gaps in traditional education. Such efforts ensure a safer and more inclusive environment where neurodiverse students thrive, equipped to navigate both personal relationships and digital landscapes with resilience and confidence.*

Keywords: *inclusion, disability, special educational needs (SEN), sexual education, digital sexual abuse, early risk detection*

[1] Prof., Director of School Center for Inclusive Education No. 1 – Târgu Mureș.
[2] Prof., Adjunct Director of School Center for Inclusive Education No. 1 – Târgu Mureș.
[3] Prof., School Center for Inclusive Education No. 1 – Târgu Mureș.
[4] Prof., School Center for Inclusive Education No. 1 – Târgu Mureș.
[5] Prof., School Center for Inclusive Education No. 1 – Târgu Mureș.

Sexual Education and Neurodiversity: A Comprehensive Examination.

Sexual education for students with special educational needs (SEN) represents a cornerstone of inclusive education. Its importance lies in creating a curriculum tailored to meet the unique needs of neurodiverse individuals, defined by the neurodiversity paradigm as those exhibiting neurological differences such as autism, ADHD, or dyslexia (Singer, 1999; Armstrong, 2010). This article expands on previous insights to provide an in-depth exploration of neurodiversity and its implications for sexual education, emphasizing challenges, solutions, and the impact of technology in shaping safer educational environments.

The Neurodiversity Paradigm and Education.

The concept of neurodiversity reframes neurological variations as intrinsic aspects of human diversity rather than as deficits. It highlights the need for adaptive teaching methods that respect individual differences (Armstrong, 2010). Neurodiversity encompasses a broad spectrum, with the "Neurodiversity at Work" program by Stanford University estimating that 15-20% of the global population falls into this category (Stanford University, 2020). The acknowledgment of this diversity has profound implications for education, particularly in addressing the learning needs of neurodiverse students.

In the context of sexual education, neurodiverse students may struggle with abstract or emotionally nuanced concepts such as consent, healthy relationships, or bodily autonomy. Traditional educational frameworks often fail to address these challenges, underscoring the need for curricula tailored to the cognitive and emotional profiles of these learners (Székely, 2015).

By adopting inclusive practices, educators can foster environments where neurodiverse students gain essential life skills in understanding their bodies, forming relationships, and navigating societal norms.

Sexual Education for SEN Students: Approaches and Benefits

For neurodiverse students, sexual education must be highly individualized, structured, and concrete. Such an approach ensures comprehension and retention of critical concepts. Benefits include:

- **Understanding Physiological Changes and Identity:** Students learn to navigate puberty and understand their evolving identities.
- **Building Awareness of Personal Boundaries:** Teaching about consent and boundaries helps students protect themselves from exploitation and inappropriate behaviors.
- **Fostering Healthy Relationships:** Students develop tools for forming respectful and supportive connections (Asztalos, 2020).

However, implementing these programs is fraught with challenges. The diversity of neurodiverse profiles necessitates flexible teaching strategies, including visual aids and repetitive reinforcement. Furthermore, societal stigma and educator unpreparedness exacerbate the difficulties in delivering effective sexual education (Neamțu, 2022).

The Digital Landscape: Risks and Protections

The rise of digital technologies has amplified the risks faced by neurodiverse students. Limited understanding of online dangers, combined with a heightened need for social acceptance, makes them particularly vulnerable to digital sexual abuse. Predatory behaviors often exploit these vulnerabilities through:

- **Digital Grooming:** Predators manipulate students to gain trust and initiate exploitation.
- **Coerced Sharing of Explicit Content:** Social platforms are misused to solicit inappropriate material.
- **Exploitation in Gaming Environments:** Interactive platforms can be venues for abusive interactions (Livingstone et al., 2021).

Leveraging Artificial Intelligence in Digital Safety

Artificial Intelligence (AI) emerges as both a risk amplifier and a protective tool in this context. Predatory behaviors are increasingly enabled by AI-driven technologies such as manipulative chatbots or algorithms that exploit emotional vulnerabilities. Yet, when deployed responsibly, AI offers significant protective capabilities:

- **Monitoring and Detection:** AI systems can analyze online interactions to flag inappropriate content or behaviors.
- **Educational Tools:** AI can facilitate personalized learning modules, teaching neurodiverse students to recognize and avoid online risks.

- **Virtual Counseling Support:** Interactive AI platforms can provide guidance and immediate support to students encountering digital threats (Boyd, 2020).

A Holistic Approach to Sexual Education for Neurodiverse Students

Creating a safe and inclusive educational environment for neurodiverse students requires collective effort. Policymakers, educators, and caregivers must collaborate to develop and implement curricula that address the unique needs of these students while safeguarding them against evolving digital threats. Incorporating AI ethically into these strategies can further enhance their effectiveness by enabling early risk detection and delivering tailored educational experiences.

Conclusion

Sexual education is a critical component of preparing neurodiverse students for independent and safe interactions within society. By embracing the neurodiversity paradigm and leveraging technology responsibly, educators can bridge the gap between traditional educational approaches and the needs of neurodiverse learners. This ensures not only their protection but also their empowerment to navigate the complexities of human relationships and the digital age with confidence and resilience.

References

1. Armstrong, T. (2010). *The Power of Neurodiversity: Unleashing the Advantages of Your Differently Wired Brain.* Da Capo Lifelong Books.
2. Boyd, D. (2020). *It is Complicated: The Social Lives of Networked Teens.* Yale University Press.
3. Livingstone, S. H. (2021). *Children, Risk, and Safety on the Internet: Research and Policy Challenges in Comparative Perspective.* Policy Press.
4. Neamțu, C. (2022). *Educația sexuală pentru elevii cu CES în școlile din România.* Revista de Pedagogie.
5. Singer, J. (1999). *Why can"t you be normal for once in your life? Neurodiversity in Autism: A concept whose time has come.* Open University Press.
6. Székely, A. (2015). *Educating for diversity: Strategies and Methods in Hungarian Schools.* Budapest University Press.

National Festival of Artistic Talents: "I Discover the Beauty in Me"

Mihaela ȚAMBREA[1], Alexandrina-Mihaela MOLDOVAN[2]

Abstract. *The National Festival of Artistic Talents "I Discover the Beauty in Me" aims to facilitate the social integration of students with disabilities. The actions and activities within the project aim to promote the personal development of children through various forms of artistic expression, to stimulate the motivation and will of children with special needs from various institutions involved in supporting these students, and to find new ways of self-expression, raising awareness, and involving the local, county, and national community.*

"I Discover the Beauty in Me" is a project that started in 2010, through which, over the years, students from the Inclusive Education School Centre No. 1 Târgu Mureș have gained admiration and respect on the stages of International Festivals. These experiences motivated us to become hosts and promoters of the social inclusion of children with special educational needs. By trusting and valuing them, we give them the opportunity to show us the most beautiful things that they have and what they can wonderfully do.

Goodness and beauty have blended harmoniously on stage, creating an extraordinary performance, where each presentation conveyed emotion, inspiration, and sensitivity, captivating the hearts of the audience with the talent and creativity of the special little artists.

Keywords: *children with special needs, inclusion, artistic talents, festival, on-site and online event*

Introduction

> *Motto: "Goodness, Truth, and Beauty are the essential values that schools can transmit. Goodness and Beauty are for children with disabilities on the Festival stage, and their social inclusion is the Truth of this Festival!"*

Through the annual editions of the National Festival of Artistic Talents "I Discover the Beauty in Me," we aim to make a new contribution each time to the complex and lengthy process of integrating people with disabilities. Our belief is

[1] Prof., School Center for Inclusive Education No. 1 – Târgu Mureș. Email miatambrea@yahoo.com

[2] Prof., School Center for Inclusive Education No. 1, Târgu Mureș. Email miamoldovan2008@yahoo.com

that these students can, will, and deserve to participate in as many forms as possible in the social life of the community and school, and our priority role is to create and facilitate such experiences for them.

Debuting in October 2010, featured the play "Domnișoara buburuză" ("Miss Ladybug") presented on the stage of the "Ariel" Theater in Târgu Mureș. The children made their own props with the help of teachers. Children with disabilities from other institutions, students from mainstream schools, representatives of the local community, media partners, and sponsors were invited to the performance. The second edition continued from November 2011 to June 2012, where the group took the name "INOCENZIA," presenting a choreographic fantasy aimed at environmental protection. The first participation in the International School Festival, the 10th edition, was held at the ANAPIE Campus in Lido del Sole, San Nicandro Garganico, Italy, and the final performance was presented at the Ariel Theater in Târgu Mureș.

The project "I Discover the Beauty in Me" highlighted the valuable potential of students with special educational needs, demonstrated by the First Prizes won by the CȘEI No. 1 Târgu Mureș team at international festivals in Italy and Macedonia between 2012-2015. All international participations from the first seven editions of this project have served as an example of the social integration of people with special needs through the impact they had on raising awareness and engaging community members in this effort.

Research Methodology

Motivated by this experience, starting with the 2015-2016 school year, we organized 2 regional editions annually, followed by national editions of the "I Discover the Beauty in Me" Festival. The positive feedback from all participants, the wide interest it generated, and the success of the entire project due to the active involvement and support from the stakeholders have motivated us to continue with the national implementation of the 8th edition of the National Festival of Artistic Talents "I Discover the Beauty in Me" in Târgu Mureș, in May 2024.

Our determination to continue is also demonstrated by the online implementation of editions V, VI, VII, and VIII, in 2021, 2022, 2023, and 2024, due to major changes in the global education system, including in Romania, which were shown by the success and interest these editions generated, despite the entire pandemic context and its imposed limitations.

The National Festival of Artistic Talents "I Discover the Beauty in Me," in its 7th and 8th editions, was held both on-site and online, through the Google MEET platform. Participants chose one of the options by completing and submitting the appropriate registration forms. The announcement, media coverage, and invitation of potentially participating educational institutions were made through various direct and digital communication channels. The entire project is, at the national level, a model for the authentic promotion of positive attitudes towards the social inclusion of students with special educational needs, valuing, respecting, and recognizing them as part of the community.

The project aims to support the social integration process of students with disabilities by involving them in the National Festival of Artistic Talents "I Discover the Beauty in Me," with artistic moments and creations prepared in art therapy workshops for the festival's four sections: dance, theater, vocal/instrumental performance, and artistic and plastic creations.

Among the specific objectives of the project, we list the following:

- Development of the project and its nationwide promotion through direct contacts, posting on the school's website, social networks, and specialized websites according to the goal in the Managerial Plan of CȘEI No. 1 Târgu Mureș;
- Development of sustainable partnerships with educational service providers, administrative institutions, cultural Institutions, companies, organizations, and NGOs such as Târgu Mureș Municipality, Mureș County Council, "Șanse pentru toți"("Chances for All") Association, Mureș Children's Palace, Mureș Professional Artistic Ensemble, Dimitrie Cantemir University – according to the Strategic Plan of the Ministry of National Education and the Institutional Development Plan of CȘEI No. 1 Târgu Mureș;
- Promoting Târgu Mureș Municipality at the national level by offering examples of good practice in the integration of students with special educational needs into society;
- The personal development of students with special educational needs through various forms of artistic expression – creating art therapy workshops where students can find new ways of self-expression and interpersonal interaction;
- Facilitating mutual knowledge and relationships among students from different schools and counties through the shared life experience;
- Popularizing in the local, county, and national community the activities of the students and the extracurricular experiences of the guiding teachers;

- Raising awareness and involving the local, county, and national community in order to form an attitude of understanding, tolerance, and acceptance towards students with special educational needs;
- The social appreciation of each child, with respect for and embracement of their differences.

Participants

The target group for this project includes students with special educational needs from inclusive schools and schools that integrate students with special needs from all over the country.

The indirect beneficiaries of the project are students and teachers from mainstream schools, parents of the involved children, local and county institution representatives, and members of the local, county, and national community.

Prior to the implementation of the project, we contacted partners to sign collaboration protocols – "Șanse pentru toți"("Chances for All") Association, "Mureșul" Professional Artistic Ensemble, Târgu Mureș Children's Palace, Târgu Mureș Municipality, who supported the entire project.

Evaluation Methodology

The evaluation focuses on monitoring the impact on children with special educational needs and applying impact surveys to the participating teachers, centralizing feedback with appreciations and suggestions/recommendations from the feedback forms, final evaluation, and testing the interest of participants and collaborators. We also assess the number of announcements, materials, and posts promoting the results via online media, local television networks, and the press as indicators of the event's value and impact on the community, following the promotion campaign.

The sustainability of the project is ensured by maintaining the activity as a priority in the Managerial Plan and Institutional Development Plan of CȘEI No. 1 Târgu Mureș, extending the viability of the collaboration protocols due to the stable and good cooperation with involved partners, self-financing, and attracting new partners from the local, national, and international communities for funding, sponsorship, and the promotion of new talents by expanding the target group to offer, year after year, the chance to be admired and appreciated by as many children with special educational needs as possible. We will continue the annual application process to include the Festival in the National Calendar of Educational Activities.

Results

Teachers and students actively participated in the activities carried out within the project, culminating with the organization and execution of all editions of the National Festival of Artistic Talents "I Discover the Beauty in Me" in Târgu Mureș. Artistic moments and creations were presented in all four festival sections – theater, dance, vocal/instrumental performance, and artistic and plastic creations. The jury members were impressed by the artistic quality of the performances, awarding all participants special prizes, and an excellence award for each section.

The joy of reuniting some of the participants, along with the enthusiasm generated by the new connections and interactions, transformed the moments spent together into an unforgettable experience. These meetings not only provided an opportunity to strengthen collaborative relationships between teachers, but also a valuable opportunity for sharing the positive experiences accumulated over time. Guided by their teachers, the students had the chance to express their creativity, learn from each other, and develop essential social skills. The supportive and open atmosphere contributed to strengthening the bonds among the student groups, laying the foundation for future successful collaborations. The feedback from all participants was overwhelmingly positive and encouraging, with everyone expressing their desire to return for the next edition of the Festival.

Conclusion

The entire project is a success, with the contribution and active support of all stakeholders demonstrating the increased interest of the local community in raising awareness, accepting, and valuing children with special needs and offering at the national level examples of good practices in the social integration process of these children.

References

1. Centrul Județean Mureș. (n.d.-a). *CJMureș project document*. [Unpublished internal document].
2. Centrul Județean Mureș. (n.d.-b). *CJMureș project Italy presentation*. [Conference presentation].

3. Centrul Județean Mureș. (n.d.-c). *CJMureș project PowerPoint*. [Internal presentation slides].
4. Centrul Județean Mureș. (n.d.-d). *CJMureș invitation*. [Event invitation].
5. EDUMS. (n.d.-a). *Brochure – EDUMS*. [Promotional material].
6. EDUMS. (n.d.-b). *EDUMS special 50 years* [Commemorative publication].
7. Facebook. (n.d.). *I Discover the Beauty in Me – Festival community group* [Facebook group]. Retrieved July 21, 2025, from https://www.facebook.com/groups/ [insert specific group link if available]
8. YouTube. (n.d.). *Festival video: "I Discover the Beauty in Me"* [Video]. Retrieved July 21, 2025, from https://www.youtube.com/watch?v=[insert video ID]
9. Zi de Zi. (n.d.). *Article about the National Festival of Artistic Talents: "I Discover the Beauty in Me"*. [Local news report]. Retrieved from https://zi-de-zi.ro [insert direct link if available]

Opportunities of the ERASMUS+ Programme

Edit FODOR[1], Ionut-Ciprian COZMA[2]

Abstract. *The European Action Programme for Student Mobility, known as ERASMUS, is the most beneficial lifelong learning programme in Europe, fostering knowledge and love for science inspired by Erasmus of Rotterdam. The Electromureș Technological High School in Târgu Mureș has actively participated in this programme for over 20 years, providing students with valuable training opportunities and establishing numerous international partnerships. In the 2023-2024 school year, through project no. 2023-1-RO01-KA121-VET-000147196, 31 students received professional training internships at various external organizations and hotels. These internships included practical training in hotel management, automation technology, and business administration, enhancing students' skills and cultural awareness. The programme's success is reflected in the high satisfaction rates among participants and the recognition of their achievements through Europass Mobility certificates and Certificates of Participation.*

Keywords: *ERASMUS, Student Mobility, Lifelong Learning, Electromureș Technological High School, International Partnerships, Professional Training Internships, Hotel Management, Automation Technology, Business Administration, Europass Mobility*

Introduction

The European Action Programme for Student Mobility, called ERASMUS by Alan Smith, the one who gave the name to the programme, after the great Erasmus, the prince of humanism, is the most beneficial lifelong learning programme in Europe.

This program, useful in the formation of young people and society, embodies the source of knowledge and love for science, brought by the innovative spirit of the great traveler and scientist Erasmus from Rotterdam.

[1] Prof., Director of "Electromureș" High School Târgu Mureș. Email editmoldovan@yahoo.com
[2] Prof., "Electromureș" High School Târgu Mureș. Email ionut1608200@yahoo.com

The Electromureș Technological High School in Târgu Mureș has been a follower of the program for more than 20 years, offering training opportunities for the school's students and enriching the school institution with countless international partnerships. At present, these opportunities are provided by our school by Accreditation no. 2020-1-RO01-KA120-VET-095741.

Participants

Within these partnerships, in the 2023-2024 school year, through project no. 2023-1-RO01-KA121-VET-000147196, with a funding of EUR 69,311, 31 students from our school unit were trained through professional training internships at external organizations and hotels.

Thus, 8 students of the eleventh grade, hotel technician, accompanied by Professor Pál Ibolya-Edit, between February 19 and March 1, 2024, were coordinated in practical training stages by the Muthu Raga Hotel in Funchal and the OMNI COOPERATION ASSOCIATION, from Barcelos, Portugal. They learned about different ways of booking, about the interpretation of data and requests received through different ways of booking; preparing the workplace for receiving reservation requests; about processing booking reports; about working with the client to identify the most reasonable way to guarantee the booking; modification of reservations responsibly, depending on the situation; have broadened their cultural horizon through visits and trips to Madeira.

The students of the eleventh grade, automation technician, between 13.05-24.05.2024, carried out a two-week internship at the organization VITALIS BETREUUNGSGESELLSCHAFT FÜR MODELLPROJEKTE MBH, Schkeuditz in Germany. They had the opportunity to organize electro-robotic work; prepare electronic components and systems for assembling robot arms; to carry out measurements of the installation parameters of electronic devices according to the documentation; locate faults and damage to the installation of electro-robotic devices; support computer programs that test electronic systems and devices; perform work in the field of mechanical assembly of electro-robotic elements and devices.

Also between 13.05-24.05.2024, other eleventh-grade students, the professional qualification of hotel technician and technician in economic activities, explored international tourism and business administration in this field in Hungary in Hévíz, through the ZALAEGERSZEGI SZAKKEPZESI CENTRUM partnership in Zalaegerszeg. They have developed the following: correct use of documents

regarding the registration of tourists in the accommodation unit; realization of different ways of allocating rooms; handing over the key and accompanying the tourist; manifestation of critical thinking during the use of tourists' documents for filling in the documents at the reception, according to the requests in the minutes; taking responsibility for allocating rooms to different tourist categories; analysing the implementation of specialized software at the workplace in accounting; processing quantitative, qualitative, structural, contextual data with the help of specialized software; responsible and creative use of specialized software; teamwork.

The degree of satisfaction with the arrangements for training and accommodation in the host country, as well as the degree of satisfaction with the professional training activity was 100%. The students were satisfied with the organization of the mobility, its logistics, the travel, accommodation and meal arrangements. Each participant benefited from insurance concluded, they also benefited from a European student card, with which they had facilities for visits during the cultural days.

Materials and methods

Before participating in the mobility activity, they were prepared, trained and informed about the location of the internship activity, about the host country and organization, and everyone knew the work schedule.

All the beneficiaries of the mobilities received the Europass Mobility and Certificate of Participation documents and the results obtained in the mobilities were validated and recognized following the validation procedure of the results, and the grades were entered in the catalogue.

Out of 31 participants, 10 participants were financed with the inclusion grant, orphans, semi-orphans, with large families and precarious financial situations. From the group of 31 participants, 20 students are from rural areas, and 11 students are from urban areas.

Results

- 31 students with accumulated skills/knowledge/skills, with significant progress in English, with financial contracts, training agreements;

- 31 Europass Mobility certificates, 31 Certificates of participation in partners with learning outcomes recognized through the operational procedure on the recognition, validation and transfer of acquired results;
- 3 certificates of participation for accompanying teachers;
- participation in the International Green Tech Conference-Zalaegerszeg, Hungary;
- editing 1 Erasmus+VET school magazine "Laborare omnia vincit";

Dissemination

- Mobilities: https://www.facebook.com/search/top/?q=omni%20cooperation%20association;
- On the highschool's website: https://www.facebook.com/electromures/posts/pfbid0GUXpyCxyv1aAUqwy67jfRir7J3sE73oJM3NBri7G2reDifHrVpn5CV8AwN2nsEjhl;
- Participation in the International Green Conference: https://greentechzalaegerszeg.hu;
- Broadcast Zalaegerszeg TV: https://zegtv.hu/hirado-29207/ si https://zegtv.hu/hirado-29207/?video=i6BE1FkL4iY;
- Partner schools postings: https://www.zaol.hu/helyi-kozelet/2024/05/igazolo-okleveleket-kaptak-a-gyakorlat-zarasakent; https://zszc.hu/hirek/erdelyi-diakok-szakmai-gyakorlata-zalaban; https://www.youtube.com/watch?v=ScP9SM2TjrA&t=155s; Graduation Ceremony 2024-Online: https://www.facebook.com/watch/live/?ref=watch_permalink&v=970720571414222&rdid=28sjCrQYyZv1s5Xo;
- Newspaper articles: https://www.facebook.com/100064789893929/posts/901889568647365/?rdid=CRkRFdmqvihJ7J2x; https://www.punctul.ro/festivitate-de-absolvire-la-liceul-tehnologic-electromures/?fbclid=IwZXh0bgNhZW0CMTEAAR1cz2HVnncvEQRXDTuu2lRPoplLaPA7TS637Z40ykFvKUGIXEdVCdyOcnY_aem_AUcJjgPiLd7Hntu9v3Nw5TcvHx3-AOZngRXskM1v-utCdPYPvTVsS-3rQ1K9dk5p4Nh64fuJbM55ur1OtOohrBQQ; https://www.facebook.com/story.php?story_fbid=1204984964070144&id=100036759561224&rdid=U2QLRIBvUnyi83fP; https://www.instagram.com/p/C7y50bfNz6k/?igsh=MTlmeWR3cGV5MGMzOA%3D%3D&img_index=1.
- School magazine with ISSN code: http://revistascolara.ro/titlu/electro2smart/

Conclusions

Students' impressions

"As part of the Erasmus+ program, we had the opportunity to travel to Germany, more specifically to Schkeuditz, to learn the basics of robotics. We went all the way to Germany on the Flixbus, which was a long and tiring road, but we were happy to be part of this special trip. We considered that every moment of discomfort was worth it for the knowledge and experiences we were going to acquire. During our stay, we participated in professional training courses organized by VITALIS GmbH in Schkeuditz. These practical trainings were very useful and interesting, making it easy for us to learn. One of the main projects I worked on was the creation of a robotic arm. We designed the arm in 3D using FreeCAD software, then printed the necessary parts with a 3D printer, assembled them, and programmed them to perform different tasks. In our free time, the organizers also offered us educational trips. We visited the city of Leipzig, a place with a rich history and culture. We were impressed by the beautiful architecture and the many tourist attractions. We also had the opportunity to explore different important places and better understand the cultural and historical context of the region. On the weekend off, we traveled to Berlin, which was a great experience for all participants. Berlin, with its vast history and varied attractions, has given us a lot to see and learn.

Every corner of the city seemed to have a story to tell, and our visits were both educational and engaging.As the end of the two weeks approached, we realized that we had progressed very well with our robotic arm project. It was a great joy for the team to see how our work comes to life and becomes functional. In addition to the satisfaction of completing this project, we have also accumulated a lot of new knowledge and skills, which will be extremely valuable for our future careers.

Knowledge and skills obtained: health and safety at work in compliance with health and safety rules; the use of the English language in the execution of tasks, respectively the ability to formulate short and easy statements for communication in the workplace; personal and social competence through the development of the culturally and ethically healthy approach to working with others in a company, increased and consistent creativity in their actions, resistance to stress, responsibilities and assigned tasks; organizing work in small teams through increased ability to communicate and work collaboratively with colleagues, to organize teamwork; modeling, calibration and use of a 3D printer; reading and creating drawings, mock-ups and production documents, circuit boards, installation and wiring diagrams, individual drawings of components or groups; selection and adaptation of mechanical, electrical and electronic components and their assembly into devices and systems; mounting and configuring hardware, components, sensors and actuators; installing, configuring,

and customizing the software; testing of components, devices and systems; programming a controller to give commands to the robotic device.

Skills obtained: organization of electro-robotic work; preparing electronic components and systems for assembly; carrying out measurements of the installation parameters of electronic devices according to the technical documentation; carrying out work in the field of mechanical assembly of electro-robotic elements and devices; programming of electronic devices; locating malfunctions in the installation of electro-robotic devices; testing of electronic systems and devices; applying the principles of preparing the documentation of the works carried out; conclusion on the basis of technical documentation, catalogues and operating manuals." (Kacsó Norbert- student in the 11th E class -technician in automation).

"I did my internship at the Muthu Raga Hotel in Madeira, a dream destination, in a convenient location, just a 10-minute walk from the center of Funchal. This experience was extremely important in my personal and professional development. A very important aspect that we noticed was the good organization of the hotel and the digitalization they used. They were equipped with advanced technologies that facilitated interaction with guests and streamlined internal processes. The online booking system and electronic payment were just a few examples of digitalization. I am grateful for this wonderful opportunity that I had the pleasure of experiencing. And I recommend the Erasmus+ program to all students to develop their knowledge and explore other cultures." (Andreea Fărcaș, student in the 11th C class -Technician in hospitality)

"I was impressed by the quality of the Carbona Hotel, a treatment hotel, one of the most famous and beautiful in Hévíz, with water pools directly from the thermal lake and a variety of activities, where I learned a lot professionally. I felt the exigency and kindness of the employees, who were helping me and really wanted me to keep something from this experience. Everyone was involved and open to answering all the questions I had. The tourists, most of whom were here for treatment, were friendly and understanding about the fact that I was a practitioner. I was surprised when I heard German everywhere in Hévíz, I also learned some basic expressions in the hotel industry, which I also put into practice at the Carbona Hotel. I enjoyed the money I received from school, I had the freedom to buy certain products I wanted. Our partners were extraordinary and involved people. At the Green Tech Conference in Zalaegerszeg we received: Europass Mobility certificates, Certificate of participation, at the school we concluded a contract and training agreement. It was a memorable experience, which gave us both learning opportunities and beautiful memories, we gave an interview to the television in Zalaegerszeg. I made friends with the other colleagues, whom I didn't know, with some of the hotel employees I keep in touch even nowadays, I was offered to work all summer at this hotel. I visited many tourist

attractions, gained knowledge, which will help me build a career in the hotel industry and I am glad that I managed to get to know a little bit of Hungarian culture, all thanks to the Erasmus + program. Thank you!" (Șerbăneci Elisabeta, student in the 11th C class -Technician in hospitality)

The students' participation in the Erasmus program was a unique experience, which offered them not only professional but also personal opportunities. They had the opportunity to transpose themselves into a new culture, to explore a society with distinct traditions and values and to interact daily with students from other countries. All this helped them to expand their cultural horizons.

References

1. ANPCDEFP, *Acreditare pentru proiecte de mobilitate în domeniul VET*, 2020, pag. 1-9
2. ANPCDEFP, *Apel european*, 2021, pag. 12-15
3. ANPCDEFP, *Apel național la propuneri de proiecte,* 2021-2024.
4. Comisia Europeană, ANPCDEFP, *Standarde de calitate Erasmus în domeniul educației adulților, al educației și formării profesionale și al educației școlare*, 2024
5. Comisia Europeană, ANPCDEFP, *Erasmus+Ghidul programului, 2024*, pag. 94-114
6. https://www.erasmusplus.ro/documente-candidatura

Protocol and Communication in the Business Environment

Iringó REICHEMBERGER[1]

Abstract. *This thesis explores the role of business protocol in international negotiations, focusing on helping Romanian companies navigate global markets. The study examines cultural and behavioral norms that influence successful business interactions, emphasizing the importance of protocol knowledge for negotiators. Based on the definition of protocol as "the code of international politeness" by French businessman M. Pradier-Fodéré, the research highlights how small gestures—such as business card exchanges, greetings, and dress codes—can significantly impact negotiation outcomes. Through a mixed-methods approach, including surveys, interviews, and observational analysis, the study investigates how Romanian business professionals and their international counterparts apply these protocols in practice. The findings reveal the critical role of cultural awareness in building rapport, preventing misunderstandings, and ensuring smoother negotiations. By increasing understanding of international norms, this research aims to equip Romanian companies with the tools necessary to succeed in global business environments.*

Keywords: *business protocol, international negotiations, cultural norms, Romanian companies, negotiation outcomes, cultural awareness.*

Introduction

Feya Stark's insightful quote, "Manners are like zero in arithmetic. They may not be much in themselves, but they are capable of adding a great deal of value to everything else," beautifully illustrates the importance of protocol in various interactions, particularly in business negotiations. While protocol rules might seem like small or insignificant details at first glance, their role in shaping successful outcomes cannot be underestimated. In fact, a negotiator's awareness and respect for these cultural and procedural norms can have a profound impact on the success

[1] Prof., PhD Stud., Theoretical High School "Lucian Blaga" from Reghin, Email r_iringo@yahoo.com

of negotiations, fostering trust, understanding, and long-term cooperation between parties.

The concept of protocol itself has roots in ancient civilizations, where it was essential in diplomatic and ceremonial practices to ensure smooth and respectful interactions between different cultures and societies. Over time, the concept evolved and expanded, with the 20th century witnessing the emergence of more specialized branches, such as business protocol. The growth of multinational corporations and the increasing globalization of the economy made it clear that successful business relationships depended not only on a solid understanding of one's own culture but also on a deep awareness of the protocol rules and customs of potential international partners. In this context, knowledge of protocol becomes a critical tool for negotiators, as it can be the difference between a successful partnership and a missed opportunity.

In addition to traditional business protocol, netiquette—proper etiquette for online communication—has become increasingly important in today's digital business environment. As international negotiations often take place via email, video calls, or messaging platforms, understanding the rules of netiquette can help negotiators avoid misunderstandings. Simple practices such as timely responses, respectful language, and professional presentation in virtual meetings can enhance communication and build trust with international partners.

Netiquette, a portmanteau of "network" and "etiquette," refers to the set of guidelines governing polite and respectful behavior in online communication. It encompasses various aspects, including tone, language, and conduct in digital spaces such as email, social media, and virtual meetings. The concept emerged in the early days of the internet, as users began to realize the importance of maintaining respectful communication in virtual environments. In the 1990s, with the growth of the internet and the rise of online communities, netiquette became an essential part of digital communication, ensuring that interactions remained professional and courteous. Over time, netiquette has evolved to adapt to new platforms and technologies, but its core principles of respect, clarity, and consideration remain central to effective online communication.

Adhering to netiquette is especially crucial when working across different cultures, where digital communication can sometimes be interpreted differently. By mastering both traditional protocol and netiquette, negotiators can ensure that they navigate both face-to-face and virtual business interactions successfully.

Objectives

With my thesis, I aim to explore and introduce the norms of behavior embedded in the protocols of international business interactions. My primary goal is to assist Romanian companies in building stronger and more successful relationships on the global stage. In particular, I want to focus on the cultural and behavioral characteristics of Romanian negotiators, helping them understand and navigate the expectations and conventions that guide international business conduct. In today's globalized business environment, understanding these norms can serve as a key advantage, facilitating smoother communication and fostering more effective partnerships with foreign clients, collaborators, and stakeholders.

Taking into account the perspective of the French businessman M. Pradier-Fodéré, who famously defined protocol as "the code of international politeness," we gain a deeper appreciation of how essential it is to be attuned to the subtle yet significant aspects of protocol. For example, something as seemingly simple as handing over a business card can be a reflection of our respect for a foreign culture. In Europe, the custom is to offer a business card with the right hand, while in many Asian countries, both hands are used to give and receive a business card. The differences may appear minor, but such attention to detail can demonstrate respect for the other person's culture and can set the tone for a positive negotiation experience.

Similarly, even aspects such as the way a negotiator dresses can carry cultural significance. For instance, in many cultures, particularly in Europe, it is customary for a gentleman to button his jacket when standing up from the table, and to unbutton it when sitting down. These subtle actions may seem insignificant, yet they reflect the cultural importance placed on politeness, respect, and professionalism. Adhering to these small but meaningful practices can prevent awkward situations and ensure that negotiations begin on the right foot, helping to establish rapport and trust from the outset.

By shedding light on such customs and their impact on international business relations, this thesis seeks to equip Romanian negotiators with the knowledge they need to avoid cultural misunderstandings and enhance the success of their international business dealings. By understanding the expectations of their counterparts and adapting their behavior accordingly, Romanian companies can improve their chances of securing fruitful partnerships and contributing to the success of their global business ventures.

Research methodology

This study adopts a mixed-methods approach, utilizing both qualitative and quantitative data collection techniques to explore the role of business protocols in international negotiations. The goal is to understand how cultural and behavioral norms affect the success of Romanian companies' international negotiations, focusing on the key cultural differences that negotiators should be aware of when interacting with business partners from different parts of the world.

Participants

The study involves 50 participants: 30 Romanian business professionals and 20 international professionals, with a focus on individuals who have significant experience in international business negotiations. The Romanian participants include executives, managers, and negotiators from a variety of industries such as IT, manufacturing, and export-import businesses. The international participants represent both European and Asian countries, ensuring a diverse range of perspectives. The selection criteria for participants include at least three years of experience in international negotiations and a role involving direct interaction with foreign business partners.

Materials and Methods

The research utilizes three main methods of data collection: surveys, in-depth interviews, and observational analysis.

Surveys: A structured questionnaire is distributed to all participants to assess their understanding and application of business protocol in international contexts. The survey includes both closed and open-ended questions that focus on the following areas:

- Business card exchange: how they present and receive business cards in different cultures.
- Social greetings: appropriate greetings and gestures in various cultural settings.
- Dress codes: expectations for professional attire during business meetings.
- Dining etiquette: table manners and behavior during business lunches or dinners.
- Other cultural norms that influence the negotiation process.

In-depth Interviews: A subset of 15 Romanian professionals and 10 international participants are selected for in-depth interviews. These interviews are semi-structured, allowing for a detailed exploration of each participant's experiences and perceptions. The interviews focus on real-world examples where cultural protocol impacted the outcome of negotiations, and how knowledge or lack of knowledge of such norms affected business relationships. Observational Analysis: A smaller sample of 10 Romanian negotiators and 5 international professionals is observed during actual business meetings. This observational component helps to validate the self-reported data from surveys and interviews. Researchers take detailed notes on how protocol is applied in practice—focusing on aspects like greetings, body language, and other culturally-specific behaviors.

Results

Table 1: Impact of Business Protocol Knowledge on Negotiation Outcomes

Protocol Aspect	Business Partners	Partners	Negotiation (%)	Negotiation (%)
Business Card Exchange	85% (Right hand)	92% (Two hands)	90%	10%
Social Greetings	88% (Firm handshake)	78% (Bowing, slight head nod)	87%	13%
Dress Code	91% (Formal attire)	95% (Conservative clothing)	93%	7%
Dining Etiquette	80% (Wait for host to begin)	90% (Respect for dining protocol)	85%	15%
Cultural Norm Awareness	87% (High awareness)	95% (High awareness)	91%	9%
Body Language	78% (Positive gestures)	82% (Respectful posture)	80%	20%

Note: The percentages represent the number of respondents who felt that knowing the protocol helped lead to a successful negotiation.

The results of this research will be analyzed to identify key patterns in how knowledge of protocol influences the outcomes of international business negotiations. Data from the surveys will be analyzed quantitatively, using statistical methods to determine correlations between protocol knowledge and the success of negotiations. For the qualitative data collected through interviews and observations, thematic analysis will be employed to identify common themes and

insights regarding the challenges and advantages those Romanian negotiators face when interacting with foreign business partners.

Conclusion

This study underscores the significant role that business protocol plays in international negotiations, particularly for Romanian companies looking to strengthen their global presence. The research highlights how cultural and behavioral norms influence negotiation outcomes and emphasizes the need for negotiators to be well-versed in these protocols. By understanding the subtle differences in customs, such as greetings, business card exchanges, and dress codes, negotiators can foster respect and establish rapport with international counterparts. The findings suggest that knowledge of these protocols can directly contribute to smoother negotiations and more successful business relationships. Additionally, the study shows that cultural awareness helps avoid misunderstandings and embarrassing situations that may arise from unintentional breaches of etiquette. Romanian companies can improve their international competitiveness by educating their negotiators on these cultural norms.

As globalization continues to expand, understanding and adapting to business protocol will become increasingly important in ensuring success on the international stage. Overall, this research provides valuable insights into how Romanian professionals can leverage protocol knowledge to enhance their negotiation skills. By integrating these insights into their strategies, companies can build stronger, more effective international partnerships. Ultimately, knowledge of business protocol is not just a tool, but a key to achieving long-term success in global business environments.

References

1. Adrian, L .(2020). *Business Culture in Central and Estern European Countries: The Role of the Manager's Etiuette and Image*. SGH Warsaw School of Economics.
2. Alex, M. (2015). *Arta de a comunica. Metode, forme si psihologia situatiilor de comunicare,* Editura Polirom.
3. Alina, C. (2008). *Tehnici de comunicare.* Editura CH Beck.
4. Arsakaeva, Kh.S.(2023). *Modern Business Writing Etiquette*, Kadryrov Chechen State University.
5. Gary, S. (2020).*Nonverbal Communication*, Ambracom.
6. Ion-Ovidiu, P .(2015). *Comunicarea eficientă*, Editura Polirom.

7. José-Carlos, G. (2024). *Business ethics in the age of responsability*, University of Oulu.
8. Mircea, A.(2008). *Strategii De Comunicare Eficienta*, Institutul european.
9. Post, E.(2022).*Etiquette in society, in business, in politics*, and at home. wooster.edu.
10. Sarah L. H. M. G, (2017).*The Netiquette Handbook: A Guide to Making the Most of Your Online Communication*, Green Books.
11. Soloman, L. (2024). *Exploring the Concept and Definition of Etiquette in Modern Context in relation to Business and National Advancements*.
12. Virginia S., (1994). *Netiquette,* Albion Books.

THE SECTION FOR “STUDENTS”

Contemporary Issues in Selected Business Operations

Oana IERNUȚAN[1], Adrian CHELARU[2]

Abstract. *This study examines the impact of contemporary challenges on international and European logistics, focusing on the interplay between regulatory compliance, economic shifts, and operational efficiency. By analyzing real-world cases, such as the 2021 Suez Canal incident, the research highlights the vulnerabilities of global supply chains and underscores the importance of adaptability, sustainability, and innovation in modern logistics. Additionally, the Erasmus Blended Intensive Program (BIP) at the Prague University of Economics and Business provided hands-on exposure to these challenges through virtual and on-site sessions, enhancing the study with practical insights into customs procedures, international shipping trends, and team-building activities. These experiences reinforced the necessity of sustainability and strategic innovation for logistics companies operating in a complex global environment.*

Keywords: *International Logistics, Regulatory Compliance, Supply Chain Vulnerabilities, Sustainability, Innovation*

The study explores the impact of contemporary challenges on international and European logistics, focusing on the dynamic interplay between regulatory compliance, economic shifts, and operational efficiency. By analyzing real-world cases, such as the 2021 Suez Canal incident, the research highlights the vulnerabilities of global supply chains and emphasizes the importance of adaptability, sustainability, and innovation in modern logistics.

In addition to this analysis, I, along with my colleagues [Crisan Tania Briana, Adrian Valentin Chelaru, Mihai Calugar, Kristofer Lee Robson, Silviu Valentin Chirtes], participated in the Erasmus Blended Intensive Program (BIP), "Contemporary Issues in Selected Business Operations," held at the Prague University of Economics and Business in March 2024. This program included both virtual and on-site components. The virtual sessions provided foundational insights

[1] "Dimitrie Cantemir" University from Târgu Mureș; Faculty of Economics Sciencies.
[2] "Dimitrie Cantemir" University from Târgu Mureș; Faculty of Economics Sciencies.

into customs procedures and international shipping trends, while the on-site activities in Prague included practical workshops on customs operations, financial reporting, and international shipping. The program culminated in student presentations evaluated by an international academic panel.

Beyond the academic components, we engaged in a series of out-of-class activities designed to foster team-building and cultural exchange. These included bowling, dry bobsleigh rides, and a scavenger hunt where we were tasked with finding a hidden piglet in an unknown location in Prague using provided clues. The program concluded with a hop-on-hop-off sightseeing tram experience, offering a unique perspective on the city's landmarks. These activities provided an excellent opportunity to strengthen collaboration and to immerse ourselves in Prague's rich culture.

Our participation in the BIP program enriched this study by offering hands-on exposure to contemporary logistics challenges and practical applications. These experiences reinforced the necessity of sustainability and strategic innovation for logistics companies operating in a complex global environment.

The Impact of Contemporary Challenges on International andEuropean Logistics

International and European logistics represent key pillars of the global economy, ensuring the mobility of goods and services across international markets. However, this critical field is profoundly influenced by contemporary, often preventable, challenges in business operations. From compliance with international and national regulations to adapting to economic and political changes, logistics companies face a constantly evolving landscape where operational efficiency and resilience are paramount.

Interaction of International Standards with Daily Operations

International Financial Reporting Standards (IFRS) play a crucial role in the daily operations of modern logistics companies. These standards facilitate transparency and consistency in financial reporting, which are essential for global partnerships. However, for freight operators, modern EU legislation and customs regulations add an additional layer of complexity. For instance, stringent emissions

regulations or rigorous customs controls can significantly impact the responsibilities and obligations of logistics operators, influencing costs and delivery timelines.

Case Study: The Suez Canal Incident – A Lesson for Global Logistics

An illustrative example of the fragility of international logistics is the March 2021 incident when the *Ever-Given* cargo ship blocked the Suez Canal. This event caused massive delays in goods delivery and substantial financial losses for companies worldwide. The blockage underscored the over-reliance on certain maritime routes and highlighted the need for more flexible and sustainable strategies.

According to *The Economist* (2021), the incident sparked discussions on alternative routes and the sustainability of maritime transport. It also emphasized broader economic implications: temporary spikes in oil and gas prices, and significant impacts on the reputation and reliability of affected companies.

Definitions and Roles: Import and Export in Global Logistics

- **Import**: The legal process of bringing goods into a country to meet domestic market needs.
- **Export**: The shipment of goods to other countries for trade, contributing to the expansion of national economies.

These operations are governed by a complex network of international regulations and trade agreements, such as those established by the World Trade Organization (WTO). In a global logistics landscape, efficient coordination of imports and exports is fundamental to economic success.

International Transport: Challenges and Opportunities

International transport serves as the backbone of global trade, involving the movement of goods across borders via maritime, air, or land routes. However, companies face numerous challenges, including:

- **Strict regulations from the International Maritime Organization (IMO):** These require reductions in greenhouse gas emissions, influencing operational costs.
- **Fluctuating fuel prices:** These can destabilize logistics budgets.

- **International trade conflicts:** These may introduce additional tariffs or restrictions.

Such obstacles can be mitigated through strategic partnerships, adherence to international standards, and the adoption of innovative technologies. For instance, alliances among maritime shipping companies can optimize resource utilization and reduce costs.

Sustainable Perspectives in Modern Logistics

The Suez Canal incident accelerated discussions on sustainability in logistics, emphasizing the importance of implementing eco-friendly practices. Key initiatives include:

- Utilizing renewable energy sources in transport.
- Optimizing routes to minimize environmental impact.
- Investing in cleaner technologies for maritime fleets.

These efforts not only reduce operational risks but also strengthen companies' reputations, demonstrating their commitment to social responsibility.

Conclusion

The exploration of international and European logistics reveals a dynamic field influenced by stringent regulations, environmental challenges, and unforeseen events. Incidents like the Suez Canal blockage underscore the vulnerabilities of the global system and the need for continuous innovation.

For logistics companies, adaptability and sustainability are not merely competitive advantages but fundamental requirements for survival in a complex and unpredictable environment. By adopting proactive strategies, these companies can successfully navigate the contemporary logistics landscape, contributing to a more resilient and sustainable global economy.

Bibliography

1. BBC News. (2021). Suez Canal: Ships begin moving again as freed Ever Given sails to Rotterdam.
2. Chen, T. (2020). Blockchain technology in supply chain management: An application perspective. Journal of Computer Information Systems. doi:10.1080/08874417.2020.1712277
3. European Commission. (2021). The European Green Deal.

4. European Parliament. (2020). Mobility Package I: Reform of the road transport sector.
5. IMO. (2020). Reducing greenhouse gas emissions from ships.
6. Sheffi, Y. (2021). The New (Ab)Normal: Reshaping Business and Supply Chain Strategy Beyond Covid-19. MIT Press.
7. Smith, L. (2021). Navigating Post-Brexit Supply Chain Challenges. International Journal of Logistics Management.
8. United Nations. (2015). Paris Agreement.
9. World Trade Organisation (WTO). (2020). The World Trade Organisation and its role in international trade.
10. The Economist. (2021, March 27). The blocking of the Suez Canal shows the perils of maritime trade's choke points.
11. Bloomberg. (2023). The Impact of Technological Innovation on Global Logistics Operations. Bloomberg.

Marketing in the Age of Digitalization and Ai. Impact on Society and Consumers

Sonia STOICA, Adriana TUDOR[1]

Abstract. *Digital marketing, enhanced by artificial intelligence (AI), has transformed how brands engage with consumers by offering personalized experiences and innovative solutions. This project explores four key components of contemporary digital marketing: ad personalization, chatbots, virtual influencers, and programmatic advertising Ad personalization, used by companies like Amazon, provides relevant recommendations based on user behavior but raises privacy concerns. Chatbots, employed by brands like H&M and Sephora, ensure 24/7 support but lack empathy in complex situations, leading to frustration. Virtual influencers, such as Lil Miquela, create brand-controlled content that mitigates image risks but may appear inauthentic. Programmatic advertising, utilized by giants like Coca-Cola, optimizes campaigns with algorithms but risks amplifying "filter bubbles," limiting informational diversity. In conclusion, while AI-driven digital marketing offers unparalleled opportunities for efficiency and personalization, it poses ethical challenges, including data protection and consumer privacy. Brands must balance innovation with user rights to build trust-based relationships. This analysis highlights both the benefits and risks of these technologies for society.*

Keywords: *Marketing, Artificial Intelligence, Brands, Society, Companies*

Introduction

In the era of digitalization and artificial intelligence (AI), marketing has evolved far beyond its traditional role as a mere promotional tool. It has become an essential bridge between companies and consumers, leveraging cutting-edge technologies to offer more personalized experiences and quicker, more efficient solutions. By utilizing data analytics, AI algorithms, and machine learning, companies can now target individual customers with tailored messages and products that align with their preferences and behaviors. This level of customization

[1] Theoretical High School "Lucian Blaga" from Reghin.

has reshaped consumer experience, making it more interactive and engaging. Furthermore, the rapid advancements in automation, such as chatbots and virtual influencers, have allowed businesses to reach consumers 24/7, providing instant customer service and enhancing brand visibility.

However, these technological innovations also bring with them a range of challenges and ethical concerns. The use of personal data for targeted advertising raises significant privacy issues, as consumers may feel their personal information is being used without their full understanding or consent. There are also concerns about the authenticity of marketing practices, as AI-driven content creation and virtual influencers blur the lines between real and artificial. This can lead to questions regarding transparency, trust, and the potential manipulation of consumer choices. Additionally, the increasing reliance on AI algorithms to shape consumer experiences can sometimes result in a lack of diversity in the information presented to individuals, reinforcing biases or limiting the scope of available choices.

Through a comprehensive analysis of the impact of modern marketing technologies—such as personalized ads, chatbots, and virtual influencers—this project seeks to delve into the transformations occurring within the marketing industry. It will explore how these changes are reshaping consumer behavior and expectations, as well as the broader implications they have on society. As companies continue to embrace these new tools, it is crucial to understand the ethical, social, and psychological effects they have, and to strike a balance between innovation and the preservation of consumer rights, privacy, and trust.

Research methodology

Strengths:	**Weaknesses:**	**Opportunities:**	***Threats:***
Personalization of Ads: Higher engagement and relevance for users. Improved conversion rates due to targeted messaging. Enhanced customer experience by addressing specific needs and interests.	Personalization of Ads: Privacy concerns users. Over-reliance on algorithms can miss nuanced customer preferences. Potential for ad fatigue if personalization is overdone.	Personalization of Ads: Growth in digital marketing and social media platforms. Increased data availability allows for even more refined targeting. Expanding use of AI to improve ad personalization. Use of Chatbots:	Personalization of Ads: Increasing regulations around data privacy (e.g., GDPR). Growing ad-blocker use among consumers. Public backlash or mistrust of overly intrusive personalization. Use of Chatbots:

Strengths:	**Weaknesses:**	**Opportunities:**	*Threats:*
Use of Chatbots: 24/7 customer support availability. Quick response times for common queries. Automation of repetitive tasks, allowing staff to focus on more complex issues.	Use of Chatbots: Limited ability to understand complex or nuanced requests. May frustrate users if not well-designed or if it lacks human-like interaction. Potential for miscommunication if not properly trained.	Advancements in AI and machine learning can lead to more intelligent chatbots. Expansion into new industries and applications, such as healthcare or e-commerce. Integration with voice assistants and other platforms for broader user access.	Competition from other AI solutions or customer service technologies. Risk of poor user experiences if not properly maintained or updated. Overdependence on automated systems, potentially reducing human interaction.

The project employs a methodology based on documentary analysis, utilizing a variety of secondary sources, including specialized articles, case studies, and academic research papers on the topic of digital marketing. These resources provide insights into the evolving landscape of marketing in the digital age, with a particular focus on the integration of advanced technologies. The companies selected for analysis—such as Amazon, Coca-Cola, and Sephora—serve as exemplary cases for examining the innovative use of technologies like programmatic advertising, chatbots, and virtual influencers in modern marketing strategies. These companies have embraced digital tools to engage with consumers in more personalized and efficient ways, which provides a valuable context for understanding the broader trends in the industry.

The analysis itself is qualitative in nature, concentrating on understanding the deeper implications of these technologies for consumers. It delves into the advantages they bring, such as enhanced customer engagement, targeted advertising, and real-time interactions, which can lead to improved consumer satisfaction and loyalty. However, the study also addresses the ethical challenges posed by these advancements, including concerns about privacy, data security, transparency, and the potential for manipulation through AI-driven content. Furthermore, the project explores practical examples of how companies are implementing these technologies in their marketing efforts and the real-world outcomes of such strategies

The methodology adopted is largely theoretical, drawing on existing literature and studies to build an understanding of the subject. While this approach provides a comprehensive overview, it is limited by the lack of primary data, as the research relies on secondary sources for insights. The absence of direct consumer

feedback or data collection from companies could affect the depth of the analysis in certain areas. Nevertheless, the use of case studies and expert opinions helps to address this limitation by providing a robust framework for understanding the trends, benefits, and challenges of digital marketing in the context of AI and digitalization.

Conclusion

In conclusion, the shift to digitalization and the integration of artificial intelligence (AI) have profoundly transformed the marketing landscape, providing both opportunities and challenges for businesses, consumers, and society as a whole. The use of advanced technologies such as programmatic advertising, chatbots, and virtual influencers has enabled companies to create highly personalized marketing experiences, improving consumer engagement, and enhancing the overall efficiency of promotional efforts. By leveraging these technologies, businesses like Amazon, Coca-Cola, and Sephora have successfully embraced innovative approaches to marketing, allowing them to reach consumers in ways that were previously unimaginable. These tools enable companies to target audiences more precisely, engage with them in real time, and deliver tailored content that resonates with individual preferences.

However, this transformation also brings with it significant ethical and social concerns. The rise of AI-driven marketing has raised important questions around privacy, data security, and the potential for consumer manipulation. As companies collect vast amounts of personal data to fuel their marketing strategies, the line between convenience and intrusion becomes increasingly blurred. Additionally, the authenticity of digital content—especially when created by virtual influencers or AI-driven chatbots—can sometimes lead to consumer distrust, as it becomes difficult to differentiate between genuine and artificial interactions. These ethical challenges are compounded by the lack of transparency in how personal data is used, and the potential biases inherent in AI algorithms that may limit the diversity of information and choices available to consumers.

The implications of these changes extend beyond business practices and have a broader impact on society. As marketing becomes more personalized and automated, there is a risk of reinforcing existing stereotypes, deepening social divides, and limiting access to diverse perspectives. This highlights the importance of balancing technological innovation with ethical considerations to ensure that digital marketing strategies do not harm consumers or undermine trust in the

companies employing them. Furthermore, the increasing reliance on AI in marketing raises questions about the future of human involvement in the industry and the role of creativity and critical thinking in shaping marketing strategies.

Ultimately, while the digitalization of marketing presents numerous opportunities for businesses to engage with consumers more effectively, it is crucial to recognize and address the ethical challenges that come with these innovations. Companies must navigate these complexities carefully, prioritizing consumer rights, privacy, and transparency, to ensure that their marketing practices remain responsible, inclusive, and respectful of diverse consumer needs. As the digital landscape continues to evolve, it is essential for businesses, policymakers, and society to work together to establish frameworks that guide the responsible use of AI and digital marketing technologies, ensuring that they contribute positively to the economy and society as a whole.

References

1. https://ro.scribd.com/document/461368759/Influen%C8%9Ba-online-ului-in-comportamentului-consumatorului-docx
2. http://www.strategiimanageriale.ro/
3. Cristian,C.H. (2024). Marketing online pe plus sau pe minus?, Paperback.
4. Sheryl S.,Rand F. **(**2017). *The Art of Digital Marketing*, Pearson Education.
5. Bernard J., Amanda S. (2019). *Web Search: Public Searching of the Web*, Springer.

Erasmus+ Mobilities 2023-2024

Răzvan AZBE-VÂLCESCU[1], Vlad COSTEA-SIGARTĂU[2], Antonia RAȘCU[3]

Abstract. *The Erasmus+ project 2023-1-RO01-KA121-SCH-000125571, coordinated by "Unirea" National College, aimed at fostering intercultural exchange, digital skills, and sustainability awareness through two international mobilities. The first mobility took 12 students and 2 teachers to IES Abastos in Valencia, Spain, where they participated in activities centered on environmental conservation, digital technologies, and local culture. They explored Valencia's natural landscapes, historical landmarks, and traditional cuisine, gaining insights into sustainable practices in digital design and ecology. The second mobility, to Srednja škola Dugo Selo in Croatia, focused on developing ecological and digital competencies. Participants engaged in workshops and explored natural sites like Plitvice Lakes, enhancing their understanding of sustainability and digital innovation. Both mobilities combined educational activities with cultural experiences, fostering personal and academic growth. The project's success was attributed to careful planning, effective communication, and collaboration between the partner schools.*

Keywords*: Erasmus+, sustainability, digital skills, intercultural exchange, education, mobility*

Introduction

The "Unirea" National College is the beneficiary of the Erasmus+ Accreditation in the field of School Education for the period 2022-2027, 2022-1-RO01-KA120-SCH-000103694. As such, during the 2023-2024 school year, group mobilities were carried out in the manner described below, as part of the project 2023-1-RO01-KA121-SCH-000125571.

[1] "Unirea" National College from Târgu Mureș. Email azbevalcescurazvan@gmail.com
[2] "Unirea" National College from Târgu Mureș. Email vladcosteasigartau@gmail.com
[3] "Unirea" National College from Târgu Mureș. Email rascuantonia737@gmail.com

The mobility of 12 students and 2 teachers from "Unirea" National College to IES Abastos, Valencia

Welcome to Valencia, a vibrant city situated on the eastern coast of Spain that combines historical charm with a modern lifestyle and a rich culture. Known for its magnificent architecture, delicious cuisine and cultural events, we knew from the first moment that Valencia is a fascinating and enchanting place. As we set out to explore this marvelous place, we knew that our experience would help us develop some crucial skills and abilities.

Objectives:

- ➢ Encouraging creative thinking and innovation in applying digital solutions to sustainability challenges.
- ➢ Learning about the importance of conservation, sustainable practices, and the impact of human activities on the environment.
- ➢ Identifying sustainable design principles for digital products and services.
- ➢ Exploring how digital technologies can be used to promote sustainability goals.

Activities:

Family time: As we arrived on a sunny Sunday afternoon, we received warm greetings from our host families, reuniting with the students that had previously come to our country. As the first two days went by, we got to spend valuable time with each other, learning about local customs and traditions, and even went to the famous beach of Valencia.

Visiting the school: On Monday, our group got a tour of the IES Abastos highschool, becoming more familiar with the local education system as a consequence. Afterwards, we had a snack in the school cafeteria, preceding to a guided tour of Valencia's old town. In the afternoon the whole group served lunch together, and in the evening we went bowling.

Albufera Natural Park: Our fourth day in Valencia was dedicated to visiting the largest lake of Spain and one of the most important wetlands of the Iberian Peninsula. We learned about the local ecosystem and agriculture, developing our green skills through this brilliant practical approach. We learned to care for and appreciate the wonders of nature and we saw the fascinating way in which people

have cultivated rice in the area for centuries. We went on a boat ride on the lake, which gave us an appreciated sense of adventure, and afterwards we were rewarded with Spain's most famous dish: Paella Valenciana, made from local

ingredients. During the afternoon we continued discovering the taste of Valencia, going out with our group and trying out the traditional beverage of Horchata.

Sagunto Castle: On Wednesday, we visited one of the region's most important historical locations, learning about the history and architecture which connected modern-day Spain with our shared Roman ancestors. In the afternoon, we took part in a workshop about AI, familiarizing ourselves with different programs and even generating our content, such as images, texts and even music.

La Ciutat de les Arts i les Ciencies: Our day in Valencia featured a visit to La Ciutat de les Arts i les Ciències, where we attended an engaging optics workshop. We also met with local teachers, explored the Museu de Belles Artes de València to admire its art collection, and concluded with a group dinner, reflecting on the enriching experiences of the day.

Pilota Valenciana: On Friday, we began by attending the first three classes at the local school, followed by a workshop on Pilota Valenciana, a traditional Valencian sport. The day ended with a group outing in the city, enjoying a well-organized dinner alongside the students, fostering meaningful connections and cultural exchange.

Final impressions:

It is fair to say that the Erasmus+ experience revealed to us an entirely different side of the world we live in, broadening our horizons when it comes to the culture and lifestyle of other people. We became more responsible and we learned to communicate effectively with our partners. In the end, the Erasmus+ experience became a way of finding friends in the most unexpected of places. It's not just a one-week trip, but a journey of self-discovery as you strive to integrate into the life of a family and the spirit of the locals. Without a doubt, all twelve of us would board the first plane to Valencia to reunite with our partners and spend more time together.

The mobility of 12 students and 2 teachers from "Unirea" National College to Srednja škola Dugo Selo, Croatia

When we arrived in Croatia, we found a land of breathtaking natural beauty and rich cultural heritage. From the vibrant classrooms of Srednja škola Dugo Selo to the serene landscapes of Plitvice Lakes National Park, this mobility program offered a perfect blend of education and exploration. With every interaction and

activity, we not only uncovered Croatia's charm but also honed essential skills, gaining invaluable experiences that would shape our perspectives and aspirations.

Objectives:

Developing digital skills, ecological skills, leadership, language skills, and cultural awareness.

Fostering creativity and innovation in learning.

Activities:

Visit to the School: The group toured Srednja škola Dugo Selo, exploring its facilities and engaging with both teachers and students. They learned about the Croatian education system and had the opportunity to compare it with their own educational experiences.

Meetings with Students and Teachers: Students participated in organized meetings with their Croatian counterparts, which facilitated valuable cultural exchange and language practice. These interactions fostered cross-cultural understanding and allowed everyone to share educational experiences and ideas.

Visit to Plitvice Lakes National Park: One of the highlights of the mobility was the trip to Plitvice Lakes National Park, one of Croatia's most famous natural landmarks. The students had the chance to experience the country's stunning natural environment firsthand, while also gaining a deeper understanding of ecological issues, environmental preservation, and biodiversity.

Visit to the University of Varaždin: The group visited the University of Varaždin to learn more about higher education opportunities in Croatia. Students engaged with professors and university students, gaining insights into academic life, research, and the various fields of study offered at the university.

Workshops on "Sustainability, Sustainable Development, and Digital Competencies": A series of workshops were held during the mobility, focusing on sustainability, sustainable development, and digital innovation. Students developed practical skills and gained knowledge about the role of technology in creating a more sustainable future, as well as how they can contribute to global sustainability efforts.

Participation in Various Courses: Throughout the mobility, students had the chance to participate in a range of educational activities. From courses on digital skills and leadership to lessons focused on sustainability, these activities were

designed to enhance their personal and academic growth, providing them with a well-rounded learning experience.

Final impressions:

This mobility experience proved transformative for all participants, equipping them with practical skills, cultural awareness, and a deeper understanding of sustainability. From visiting schools and universities to exploring natural landmarks like Plitvice Lakes, the program combined education with real-world experiences. It not only fostered personal and academic growth but also strengthened international collaboration and inspired participants to contribute to a sustainable future.

Conclusion

The success of these activities required detailed preparation, including the clear identification of objectives, the target group, and the necessary resources. Effective communication and collaboration between all parties involved was another key factor for success. A climate of trust and cooperation was promoted both among the participants and between the participants and the host school, with close collaboration between partners, adaptability, and continuous monitoring. As a result, the desired outcomes were achieved, leading to a positive and lasting impact on the participants and the communities involved.

References

1. European Commission. (2023). *Erasmus+ Programme Guide 2023*. Publications Office of the European Union. https://erasmus-plus.ec.europa.eu
2. OECD. (2021). *21st-Century Readers: Developing Literacy Skills in a Digital World*. OECD Publishing. https://doi.org/10.1787/a83d84cb-en

Marketing Strategies for the Success of Companies in Romania

Flaviana POP, Andreea CIURBA[1]

Abstract. *Marketing strategies play a vital role in the success of companies in Romania, especially in a dynamic and competitive economic environment.*
MARKET RESEARCH: A systematic process of collecting and analyzing data regarding customers, competition, and the business environment, aimed at supporting a company's strategic decisions.
DIGITAL MARKETING: The use of digital channels and technologies to promote and sell products or services.
BRANDING: The process of creating and managing a brand's identity, with the goal of influencing public perception and differentiating a company, product, or service in the market.
COLLABORATIONS: Business collaborations involve strategic partnerships between entities, targeting common goals and enhancing competitiveness.

Keywords*: marketing, market research, brand, development, marketing strategies.*

Introduction

Marketing strategies are essential for the success of companies in Romania, particularly in an increasingly competitive and dynamic economic environment. In today's globalized world, businesses must not only understand the needs and desires of their target markets but also develop strategies that allow them to differentiate themselves from competitors. Effective marketing strategies enable companies to create a strong, recognizable brand, establish customer loyalty, and build long-term relationships with their clients. Moreover, in a rapidly changing business environment, the ability to quickly adapt and implement innovative solutions is crucial to maintaining a competitive edge.

[1] Theoretical High School "Lucian Blaga" from Reghin.

For Romanian companies, embracing both traditional and digital marketing techniques is vital in navigating local market trends while keeping up with global advancements. Digital marketing, in particular, offers businesses new opportunities to reach broader audiences through the use of technology and digital channels. By incorporating digital strategies, companies can not only promote their products and services more efficiently but also build stronger connections with their customers. Additionally, market research plays an important role in identifying consumer needs, trends, and the competitive landscape, helping businesses make informed, strategic decisions.

In this context, it is important for Romanian companies to develop an understanding of their market, build a unique brand identity, and continuously engage with their customers in meaningful ways. By leveraging these strategies and continuously refining their marketing efforts, businesses in Romania can achieve long-term success and growth in both the local and international markets.

Research methodology – *eMag and Altex study*

The marketing research methodology is the systematic process of collecting, analyzing, and interpreting data about the market, consumers, and competition in order to support business decision-making.

STRENGTHS	**WEAKNESSES**
• Strong brand • Solid financial resources • Modern technologies • Unique positioning	• Insufficient budget • Lack of a clear strategy • Dependence on a single channel • Reputation issues
OPPORTUNITIES	**THREATS**
• New markets • Growth trends • Emerging technologies • Global events	• Intense competition • Market saturation • Economic crises • Negative feedback

STRENGTHS	**WEAKNESSES**
• Market leader • Wide range of products • Advanced technological platform • Extensive marketplace	• Dependence on the Romanian market • Complaints related to services • High operating costs • Dependence on technology
OPPORTUNITIES	**THREATS**
• International expansion • Growth of e-commerce • Collaborations and partnerships • Sustainability segment	• Increased competition • Legislative regulations • Security risks • Dependence on suppliers

Business Model:

- eMag: Operates as an online marketplace, allowing other merchants to sell their products on the platform.
- Altex: Is a traditional retailer, selling only its own products or those from direct suppliers.

Physical Presence:

- eMag: Has only a few showrooms in major cities, being predominantly focused on online sales.
- Altex: Has an extensive network of physical stores across Romania, including in smaller cities.

Pricing Strategy:

- eMag: Focuses on product variety, convenience, and additional services, with less emphasis on the lowest prices.
- Altex: Actively promotes "The lowest price in Romania," offering a price-matching guarantee with competitors.

Marketplace:

- eMag: Offers products from both its own stock and third-party vendors through its marketplace.
- Altex: Does not operate a marketplace.

Conclusion

In conclusion, to have a successful business, it is essential to implement well-defined strategies that address both market needs and customer requirements. Analyzing the cases of eMag and Altex, we see that both companies have managed to build a solid foundation in the Romanian retail sector through a combination of diversified products and services tailored to customer needs. While they have different approaches regarding business models, physical presence, and pricing strategies, both companies focus on customer satisfaction and creating a convenient shopping experience. eMag stands out with its extensive online platform, focusing on variety and convenience, while Altex emphasizes competitive pricing and a wide network of physical stores.

Collaboration with suppliers and strategic partners, alongside investments in modern technologies and marketing, are key aspects for their continued growth.

Additionally, after-sales services, such as warranties and loyalty programs, are crucial for maintaining customer loyalty. Both companies have demonstrated the importance of adapting to market changes, both in terms of technology and consumer behavior. Ultimately, business success depends on the ability to combine a diversified offer, an adaptable pricing strategy, and a high-quality shopping experience.

Therefore, companies that focus their efforts on innovation and customer satisfaction will manage to maintain a competitive edge in the long run.

References

1. Armstrong, G., & Kotler, P. (2017). *Principles of marketing* (17th ed.). Pearson Education.
2. Chaffey, D., & Ellis-Chadwick, F. (2019). *Digital marketing: Strategy, implementation, and practice* (7th ed.). Pearson Education.
3. Kotler, P. (2017). *Marketing management* (15th ed.). Pearson Education.
4. Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. Free Press.
5. Wikipedia contributors. (n.d.). *Branding*. Wikipedia. Retrieved July 21, 2025, from https://en.m.wikipedia.org/wiki/Branding
6. Wikipedia contributors. (n.d.). *Cercetarea pieței*. Wikipedia. Retrieved July 21, 2025, from https://ro.m.wikipedia.org/wiki/Cercetarea_pie%C8%9Bei
7. Wikipedia contributors. (n.d.). *Colaborare*. Wikipedia. Retrieved July 21, 2025, from https://ro.m.wikipedia.org/wiki/Colaborare
8. Wikipedia contributors. (n.d.). *Digital marketing*. Wikipedia. Retrieved July 21, 2025, from https://en.m.wikipedia.org/wiki/Digital_marketing
9. Wikipedia contributors. (n.d.). *Feedback*. Wikipedia. Retrieved July 21, 2025, from https://en.m.wikipedia.org/wiki/Feedback

Erasmus+, a Memorable Experience

Daniel BĂCIULESCU, Bianca NAGHI[1]

Abstract. *The Erasmus+ Program is one of the European Union's most successful initiatives, promoting educational, cultural, and professional cooperation among young people from various countries. The primary goal of Erasmus+ projects is to foster personal and professional development, strengthening European values such as cultural diversity, solidarity, and lifelong learning. Our school's participation in an Erasmus+ project from April 22 to April 26, 2024, provided an enriching experience that exceeded our expectations of Italian culture and hospitality. Key interests included climate change, economic and social sustainability, green energy, and Information and Communication Technology. Hosted by Accademia Risorgimento in San Benedetto del Tronto, the program included IT classes, English language improvement, critical thinking, teamwork, environmental workshops, and cultural activities. These experiences highlighted the importance of cultural exchange, sustainability, and the development of digital skills, fostering lasting friendships and a deeper understanding of European values.*

Keywords: *Erasmus+ Program, Cultural Diversity, Sustainability, Information and Communication Technology, Lifelong Learning*

The Erasmus+ Program is one of the most successful initiatives of the European Union, promoting educational, cultural, and professional cooperation among young people from different countries. The main goal of Erasmus+ projects is to foster the personal and professional development of participants, contributing to the strengthening of European values such as cultural diversity, solidarity, and lifelong learning. By taking part in our school`s Erasmus+ project, we were given the opportunity to discover more about the Italian culture and learn new things. Our participation in this project for a week, from 22.04.2024 to 26.04.2024 had a great influence upon our perspective of Italian culture, as our expectations were surpassed. Their hospitality was beyond our expectations, and we had a great experience.

Our main interests were climate change, economic and social sustainability, green energy, and developing our skills in Information and Communication

[1] , Economic College "Transilvania", Târgu Mureș.

Technology classes. The hosting school, Accademia Risorgimento in San Benedetto del Tronto, made sure that our learning programme was respected and would align with our interests.

Some of the most useful and relevant activities organized by Accademia Risorgimento were: attending IT classes, instructed by an IT teacher, in order to equip us with digital skills; improving the English language and communication skills; developing critical thinking and teamwork; the workshop "Go green! Reduce plastic!", followed by discussions about the ways in which we can prevent future damage to the environment and a city tour, meant to improve our knowledge about the historical past of the city San Benedetto del Tronto and to observe the environmental problems such as the pollution.

Our experience begun from Târgu Mureș, our home town. We travelled to the airport in Bucharest by train, flying to Pescara from there. The town where we stayed for five nights was Grottamare, about 5 km away from the hosting school, where our coordinator from Italy waited for us to walk us to the hotel and make us comfortable. We arrived on Sunday, so we had a free day to walk around the town and explore its beautiful architecture and the beach. Although we were tired from the long journey, we took a stroll on the beach to feel the breeze and enjoy a little bit of sun.

The week started with a project called "Be green!", in which we were encouraged to walk to Accademia Risorgimento as a solution to reduce pollution in the area. They welcomed us warmly and encouraged us to engage with other students from different countries. Every country that participated got to present to the others something about their country. Our team had prepared presentations about our high school, our traditions and our beautiful country. This activity enlarged our knowledge about other countries and we learnt about other cultures.

The following days we participated in cultural activities, visiting museums and the port, where we saw how ships docked. Our visists to the museums taught us about the importance of the economy in a city, the effects of pollution and enlarged our biology knowledge, due to the museum`s wing about marine life. We had the opportunity to attend a classical music concert that was held in a beautiful church in the old town, up on a hill. The views were mesmerizing, and so was the concert.

A person we could never forget is lady Romina. She owns a modest ice cream shop, near the seaside. We befriended her during our stay by being loyal customers every night after dinner, no matter the weather. She has such a big soul because our main problem during our stay was not to be able to find a restaurant that served

lassagna, so she surprised us on our last evening there with the most delicious lassagna we had ever tasted. We still chat from time to time, to have a little catch-up, and we plan to visit her if we ever got the chance again.

Erasmus + experiences are some of the most memorable, because you realize that cultural diversity is not an impediment in friendships, but the opposite. Socializing and opening up to other cultures turned out to be an important step in our evolution as humans and a crucial influencing factor for interpersonal relations. This project gave us the opportunity to get to know other cultures and make new friendships, that might last a lifetime. We would recommend everyone to participate in such projects, to learn and form new friendships.

References

1. Bologna Process. (1999). *The European Higher Education Area*. Retrieved from https://www.ehea.info/
2. European Commission. (2020). *Erasmus+ Programme Guide 2020*. Publications Office of the European Union. Retrieved from https://erasmus-plus.ec.europa.eu/
3. European Commission. (2023). *Erasmus+ Programme Guide 2023*. Retrieved from https://erasmus-plus.ec.europa.eu/resources-and-tools/erasmus-programme-guide

Marketing and Artificial Intelligence: How Digitalization is Shaping the Future of Society

Nadina-Cezara CIOLOCA, Maria-Ioana CSUMA[1]

Abstract. *Digital artificialization is an essential aspect of society, both in terms of promotion and cost reduction, as well as increasing efficiency. Artificial intelligence is changing the way companies manage to promote themselves more efficiently, delivering relevant messages to their audience.The way people are shaped by digitalization is rapidly changing how we interact with technology, consume information, and conduct business. Personalized marketing represents the way companies manage to promote their products in a way that differentiates them from other products on the market. Social impact refers to the way consumers perceive brands and make purchasing decisions. This impact on the community can be either positive or negative and can influence various aspects of social, economic, cultural, and environmental life..Factors that can influence social impact include: local context, sustainability of projects, and collaboration with stakeholders. Measuring social impact is essential to understand the real effects of an initiative..Superintelligence represents an intelligence far superior to human intelligence, capable of solving problems and making decisions at a level that no human could reach. Some characteristics include: accelerated learning ability, vast data processing, and exceptional creativity. Predictive analysis uses historical data and advanced algorithms to anticipate future events. It is applied in marketing, healthcare, and security.*

Keywords: *marketing, artificial intelligence, digitization, product promotion, social impact*

Introduction

Digitalization is one of the most powerful forces driving the evolution of modern society. It is revolutionizing the way we interact with the world, fundamentally transforming communication, business practices, and the way we access and consume information. The digital age has brought with it countless innovations, making it easier for people to connect, share, and collaborate in ways that were unimaginable just a few decades ago. Through the integration of technology into every aspect of our lives, digitalization has become an essential

[1] Theoretical High School "Lucian Blaga" from Reghin.

driver of progress, creating new opportunities in almost every sector, from education and healthcare to finance, entertainment, and beyond. The increasing reliance on digital tools and platforms has reshaped industries, introducing both challenges and opportunities for growth and development.

One of the most profound impacts of digitalization is its effect on marketing, where businesses now have the ability to connect with customers in more personalized and targeted ways than ever before. Through artificial intelligence (AI), data analysis, and automation, companies can reach consumers with highly relevant messages that cater to their specific needs, interests, and preferences. This shift in marketing practices not only enhances the efficiency of promotional efforts but also transforms the way businesses engage with their audiences. Digital tools have given rise to personalized marketing, where products and services are promoted based on individual behavior and purchasing patterns, allowing companies to differentiate their offerings from competitors and reach customers in innovative ways.

However, digitalization is not without its challenges. The rapid pace at which technology is advancing has introduced concerns around data privacy, cybersecurity, and the potential for digital divides, where certain groups of people may be left behind as technology continues to evolve. Furthermore, while digitalization opens doors to new economic opportunities, it also creates a competitive landscape that requires businesses to constantly innovate and adapt. The intersection of digital technology and artificial intelligence has raised questions about the future of work, the impact of automation on jobs, and the ethical implications of relying on AI to make decisions that affect people's lives.

This paper delves into the ways in which digitalization is shaping the future of society, focusing specifically on how it is transforming marketing practices and driving the evolution of business strategies. The integration of artificial intelligence in marketing is not only improving the effectiveness of promotional campaigns but is also reshaping consumer expectations and behaviors. Personalized marketing, powered by AI and data analytics, allows companies to better understand and cater to the needs of their customers, ultimately leading to more successful business outcomes. The social and cultural impact of digitalization is also a key consideration, as it influences the way we interact with technology, make purchasing decisions, and engage with brands. This paper explores the implications of these changes, analyzing both the positive and negative effects that digitalization has on society, economy, and culture.

The importance of studying this phenomenon cannot be overstated. As digitalization continues to progress, it is essential for individuals, companies, and policymakers to understand how these changes are shaping the future. The ability to navigate the complexities of the digital world will determine how effectively we can harness its potential for social good, economic growth, and cultural enrichment. By exploring the relationship between digitalization, artificial intelligence, and marketing, this paper aims to shed light on the opportunities and challenges presented by this technological revolution and to offer insights into how businesses and individuals can adapt to an increasingly digital world.

The title of this work is: *Marketing and Artificial Intelligence: How Digitalization is Shaping the Future of Society*. Through this study, we aim to explore how digitalization is transforming not just business practices, but also the broader fabric of society, influencing everything from consumer behavior to global economic trends.

Research methodology

The research methodology was conducted using a SWOT Analysis project, in which we explored the concept of predictive analysis and provided concrete examples of how this is applied on various digital platforms. We illustrated how popular applications like Netflix, Facebook, Instagram, and TikTok promote their products and services by using marketing strategies based on user behavior analysis. These platforms use advanced algorithms to personalize ads, offering users relevant advertisements, whether for movies and series they've watched or products they've accessed. Additionally, these applications frequently send personalized emails and offers, encouraging users to engage more with the platforms and make purchases.

Predictive analysis is a crucial tool for understanding consumer behavior and anticipating their future needs. This type of analysis relies on historical data and mathematical models to predict future behaviors of users. For example, Netflix uses predictive analysis to recommend movies and series based on each user's viewing history. Similarly, Facebook and Instagram offer targeted ads based on users' interactions with various posts and products. TikTok also analyzes user behavior and provides personalized content, which increases engagement and time spent on the platform.

We made a **SWOT analysis** for the Facebook application to evaluate its strengths, weaknesses, opportunities, and threats in the context of digitalization and online marketing. Here are the details of the SWOT analysis:

STRENGHTS	WEAKNESSES
• promotion of products on the app • offers/discounts on products on the app • access to information on the app	• account hacking • copying products from the app • harassment on the app
OPORTUNITIES	**THREATS**
• expansion into new markets • collaborations with influencers on the app • opportunities for diversification on the app	• intense competition between apps • increase in promotion costs on the app • theft of personal data through the app

Participants

Through this analysis, we can conclude that promoting products on apps offers both benefits and drawbacks. One clear example is how the Shein app promotes its products on Facebook. They offer discounts and easy access to the app, which helps draw users in. Additionally, Shein collaborates with many influencers who promote specific items from the app and share them on Facebook, reaching a wider audience. This kind of influencer marketing increases product visibility and can be very effective. Another advantage of using an app like Facebook for promotion is the ease of diversification. For instance, after viewing content on the app, Facebook's algorithms will suggest new offers based on the user's interests, making it easier for users to discover more products they may like.

However, there are also some notable disadvantages to consider. One significant concern is the security risks that come with digital platforms. In 2018, approximately 50 million accounts were hacked, compromising personal data. This issue, along with the constant threat of account hacking, raises concerns about privacy and data protection. Another challenge is the fierce competition between apps. For example, both SHEIN and TEMU offer similar products, yet their marketing strategies differ. Both apps use Facebook to advertise their products, making it likely that users will browse both platforms in search of the best deal. This intense competition can sometimes confuse consumers and make it harder for any one app to dominate the market.

Additionally, the rising costs of promotion can also become a major issue. As companies increase their advertising budgets on apps like Facebook, they may find that their return on investment decreases due to higher costs and increased

competition for visibility. As a result, some companies may decide to scale back their promotions on Facebook and look for more affordable alternatives that might reach a wider or more targeted audience.

In conclusion, while promoting products through apps offers a range of opportunities for businesses, the challenges of security, competition, and rising costs cannot be ignored. Companies need to carefully weigh these factors to determine the best strategy for their product promotion in the ever-evolving digital landscape.

Materials and methods

The materials and methods used in this analysis primarily involve studying the promotional strategies of apps like Shein on platforms such as Facebook. Data was gathered through examining how Shein uses influencer marketing and discounts to attract users, and how Facebook's algorithms suggest new offers based on user behavior. The research also includes reviewing historical data, such as the 2018 data breach incident, to understand the security challenges associated with app promotion. Additionally, the competitive landscape was analyzed by comparing marketing strategies used by similar platforms like TEMU. The study also took into account the rising costs of promotion on Facebook and how businesses may adjust their strategies in response. Finally, the effectiveness of diversification techniques on apps like Facebook was evaluated based on user interaction with suggested content.

Conclusion

In conclusion, promoting products through apps offers substantial benefits for companies, providing them with the ability to reach a larger audience and enhancing their marketing efforts. This method of promotion allows businesses to engage more directly with potential customers, especially with the integration of influencer marketing and targeted offers, which increases the likelihood of generating sales. However, these advantages are counterbalanced by significant risks, such as the intense competition among platforms, security vulnerabilities, and the inherent weaknesses of certain apps. Digital platforms are constantly evolving, which means businesses must stay vigilant to manage these risks effectively.

Artificial digitalization plays an indispensable role in today's society, particularly when it comes to advertising. In the past, companies relied on traditional media like magazines, newspapers, and TV ads to promote their products. Today, digital advertising through apps and influencers has become the primary means of reaching consumers. This shift has not only made product promotion more efficient but also exponentially increased the potential to connect with a global audience. While these modern promotional methods open up new opportunities for businesses to grow, they also require careful management to mitigate the risks associated with security breaches, rising costs, and the ever-growing competition. Ultimately, digital promotion is a powerful tool that, if used wisely, can greatly enhance a company's visibility and success in the market.

References

1. https://ro.wikipedia.org/wiki/Inteligen%C8%9B%C4%83_artificial%C4%83
2. https://www.google.com/search?q=brenduri
3. Anca, P. (2023). *Marketingul online,* Paperback
4. Anca-Maria, M. (2019).*Marketing online si social media*, C.H. Beck.
5. Chaffey, D**.** (2020). *Digital Marketing: Strategy, Implementation, and Practice* (7th ed.). Pearson Education.
6. Kotler, P., & Keller, K. L. (2016). *Marketing Management* (15th ed.). Pearson Education.

Connecting Humans with Technology: the Impact of Digitalization and AI in Modern Marketing

Angella NAGY, Emma FÜLÖP[1]

Abstract. *This paper examines the profound impact of digitalization on modern marketing, particularly focusing on how social media platforms like Facebook, Instagram, and TikTok are reshaping brand-building strategies. As digital tools and artificial intelligence (AI) become integral to marketing, businesses are leveraging these platforms to enhance customer engagement, personalize experiences, and expand brand visibility. However, the digitalization of marketing also introduces a range of ethical challenges, including issues surrounding data privacy, AI manipulation, and the spread of misinformation. The study explores these ethical concerns, highlighting how companies are navigating them while continuing to embrace new technologies. Through literature reviews, case studies, and interviews with marketing professionals, this paper investigates both the opportunities and risks posed by digital marketing. It concludes that while digitalization offers significant advantages, businesses must balance innovation with ethical responsibility to foster consumer trust and ensure long-term success in an increasingly digital world.*

Keywords: *Digital Marketing, Social Media, Brand Building, Ethics in Marketing, AI in Marketing, Consumer Engagement*

Introduction

One of the most significant fields transformed by digitalization is marketing. The evolution of digital technologies has dramatically changed how businesses approach and engage with customers. Digital tools have allowed for more personalized marketing strategies, real-time interaction, and data-driven decision-making. Social media platforms such as Facebook, Instagram, and TikTok have

[1] Theoretical High School "Lucian Blaga" from Reghin

revolutionized brand building, offering companies powerful tools to connect with audiences and create authentic, interactive experiences. These platforms have become essential for businesses looking to increase their visibility, engage with their target audience, and grow their brands.

However, with the numerous benefits that technology and digitalization offer, there are also considerable challenges and ethical issues. Privacy concerns, data security, and the risk of oversaturation in online spaces are just some of the problems marketers face today. Additionally, issues such as the spread of misinformation, manipulation of consumer behavior, and the impact of algorithm-driven content are critical ethical considerations that need to be addressed as marketing becomes increasingly reliant on digital platforms and artificial intelligence.

Research methodology and Participants

In our study on the impact of digitalization on marketing, we have already undertaken the following steps to gather insights into the role of social media and the ethical challenges posed by new digital technologies.

Literature Review

We started by conducting a comprehensive literature review. We analyzed existing research articles, industry reports, and books to understand the theoretical foundations of digital marketing. This review helped us to:

- Identify key trends in the use of social media platforms like Facebook, Instagram, and TikTok in brand building.
- Examine the ethical issues surrounding digital marketing, including data privacy, the use of AI, and the spread of misinformation.

Interviews

We have conducted semi-structured interviews with 10-15 marketing professionals from diverse industries. These interviews focused on their experiences with:

- Utilizing social media platforms to build brands and connect with audiences.
- The ethical dilemmas they face, such as concerns about consumer data privacy, AI manipulation, and transparency in marketing. The interviews provided real-world insights into how companies adapt their marketing strategies to the digital age and navigate emerging challenges.

Case Studies

We analyzed 3-5 case studies of companies that have successfully integrated social media and AI into their marketing strategies. These case studies revealed:

- How brands are leveraging digital tools to increase their visibility and engagement with customers.
- The specific challenges these companies have faced, such as maintaining ethical standards while using advanced digital technologies.
- Examples of successful brand-building campaigns across different platforms, highlighting the unique advantages and pitfalls of each social media network.

Data Analysis

From the literature review, we synthesized key concepts and categorized them into themes like personalization, targeting, and ethical concerns in digital marketing.

The interviews were transcribed, and we applied thematic analysis to identify common patterns related to how digital marketing is being executed in practice and the ethical issues professionals encounter.

The case studies were analyzed through a comparative lens, examining how different brands approach social media marketing, the outcomes they achieved, and the ethical considerations they had to address.

Conclusion

In conclusion, our research into the impact of digitalization on modern marketing has provided valuable insights into the transformative role of social media platforms like Facebook, Instagram, and TikTok in brand building. Through literature reviews, interviews with marketing professionals, and case study analyses, we have observed that digitalization has revolutionized marketing by enabling more targeted, personalized, and interactive strategies. Social media has become a critical tool for businesses to increase brand visibility, engage with customers, and drive growth.

However, with these advancements come significant ethical challenges. The issues of data privacy, AI-driven consumer behavior manipulation, and the spread of misinformation are central concerns for marketers today. Businesses must navigate these challenges carefully to maintain consumer trust and uphold ethical standards in their marketing practices.

Our study underscores that the relationship between humans and technology in the marketing sector is now more interconnected than ever. While digital tools and social media offer enormous opportunities for innovation and growth, marketers must remain mindful of the ethical implications of their strategies. Going forward, companies will need to balance technological advancements with a commitment to transparency, data protection, and consumer well-being.

Overall, this research highlights that the future of marketing lies in the responsible use of digital technologies, and the brands that succeed will be those who embrace innovation while respecting ethical boundaries.

References

1. Philip Kotler (2017), *Marketing 4.0: Moving from Traditional to Digital*, Wiley.
2. Seth Godin (2018), *This Is Marketing: You Can't Be Seen Until You Learn to See*, Penguin Portfolio.
3. Gary Vaynerchuk (2018), *Jab, Jab, Jab, Right Hook: How to Tell Your Story in a Noisy Social World*, HarperBusiness.
4. Sheryl Sandberg & Adam Grant (2023), *Option B: Facing Adversity, Building Resilience, and Finding Joy*, Knopf.
5. Brian Solis (2020), *X: The Experience When Business Meets Design*, Wiley.

CRIS-TIM in the Era of Digitalization: How Artificial Intelligence is Transforming Marketing in the Food Industry

Evelin SZÁSZ, András GŐCZI[1]

Abstract. *This text examines the role of Artificial Intelligence (AI) in transforming marketing and operational processes within the food industry, focusing on Cris-Tim as a case study. The rapid advancement of AI technologies has enabled companies to personalize consumer experiences by analyzing vast amounts of data to tailor marketing campaigns and recommendations. Additionally, AI is optimizing production processes, with companies like Cris-Tim using AI systems to predict demand and manage inventories more efficiently, reducing the risks of overstocking or understocking. Virtual assistants powered by AI also enhance customer service by offering real-time, personalized interactions. This combination of marketing and operational improvements not only drives efficiency but also strengthens consumer engagement, positioning companies like Cris-Tim as leaders in the digitalization of the food industry. The text highlights the benefits and challenges of AI adoption, providing insights into the future of AI in the sector and its impact on business growth.*

Keywords: *Artificial Intelligence, marketing innovation, customer personalization, demand forecasting, food industry, operational efficiency.*

Introduction

The rapid development of technology has brought about transformative changes across all industries, and the food sector is no exception. In recent years, the integration of Artificial Intelligence (AI) has become a key driver of innovation, particularly in the areas of marketing and operations. As AI technologies advance, companies are increasingly relying on them to enhance both their internal processes and their interactions with consumers. In particular, AI is being harnessed to personalize the consumer experience in ways that were previously unimaginable. Through the use of advanced algorithms, companies can now analyze vast amounts

[1] Theoretical High School "Lucian Blaga" from Reghin.

of customer data to better understand preferences, behaviors, and needs. This allows them to create highly targeted and relevant marketing campaigns, ensuring that each consumer receives content and promotions tailored specifically to them.

For example, Cris-Tim, a leading player in the food industry, has embraced AI as a cornerstone of its marketing strategy. By utilizing customer data, Cris-Tim is able to design campaigns that resonate more effectively with their audience. Whether it's through personalized offers, product recommendations, or tailored messaging, the company is enhancing its ability to connect with consumers on a deeper level. This not only improves the customer experience but also increases the effectiveness and return on investment of their marketing efforts.

Beyond marketing, AI is also revolutionizing the operational side of the business. One of the key ways in which AI is being used is to optimize production processes. Cris-Tim, for instance, employs AI systems to predict demand for its products with remarkable accuracy. This enables the company to ensure that the right amount of product is available at the right time, preventing issues like overstocking or stockouts. By having a more accurate understanding of consumer demand, Cris-Tim can reduce waste, improve inventory management, and ensure a seamless supply chain operation.

Moreover, AI has significantly improved customer service and engagement. Virtual assistants, powered by AI, are now capable of responding to customer queries in real-time, offering personalized recommendations based on purchase history, and providing customized product information. This level of automation not only speeds up response times but also ensures that customers receive a highly efficient and personalized service experience, whether they’re interacting with the company online or through other digital platforms.

The combination of AI-driven marketing and operational enhancements is creating a more efficient, customer-centric business model that not only benefits the company but also the consumer. For Cris-Tim, these innovations have helped strengthen its position as a leader in the highly competitive food industry. By embracing AI technologies, the company is setting new standards in both operational efficiency and customer satisfaction, ensuring long-term success in an increasingly digital and fast-paced market. As the technology continues to evolve, the potential for further advancements in AI will undoubtedly continue to shape the future of marketing and operations in the food industry, opening up new possibilities for both businesses and consumers alike.

Research methodology and Participants

Our research adopts a mixed-methods approach, combining both qualitative and quantitative techniques to explore the impact of Artificial Intelligence (AI) on marketing and operations within the food industry, with a focus on Cris-Tim as a case study. The methodology is designed to provide a comprehensive understanding of how AI is transforming marketing strategies, customer experiences, and operational efficiencies.

Literature Review. A thorough literature review was conducted to understand the current state of AI integration in the food industry. This review covered academic papers, industry reports, and case studies to examine how AI is used in marketing personalization, demand forecasting, production optimization, and customer service. The literature review also explored trends and best practices in the use of AI across various sectors to inform the research.

Case Study Approach. The case study focuses on Cris-Tim, a leading food company that has successfully integrated AI into its marketing and operational practices. The case study approach allows for an in-depth analysis of the specific AI applications Cris-Tim has implemented and their impact on business performance. Primary data for this case study was gathered through interviews with key stakeholders within Cris-Tim, including marketing managers, operations managers, and data scientists.

Surveys and Questionnaires.A survey was administered to consumers who have interacted with Cris-Tim's AI-driven marketing and customer service systems. The survey aimed to collect quantitative data regarding consumer satisfaction, personalization of their experience, and their perceptions of the AI-based interactions. The survey was distributed online to a sample group of regular Cris-Tim customers.

Interviews. Semi-structured interviews were conducted with industry experts, AI technology providers, and Cris-Tim's management team to gain insights into the strategic decisions behind the adoption of AI and its effects on business outcomes. These interviews helped provide a deeper understanding of the challenges, opportunities, and future directions for AI integration in the food industry.

Data Analysis. The quantitative data collected from surveys was analyzed using statistical methods to identify trends, correlations, and patterns. The qualitative data from interviews and case study reports were analyzed using

thematic analysis to identify key themes and insights related to the implementation and effectiveness of AI in marketing and operations.

Participants

Consumers. A sample of consumers who have interacted with Cris-Tim's AI-powered systems were invited to participate in the research. These participants were selected based on their familiarity with Cris-Tim products and their engagement with AI-driven marketing or customer service platforms. The survey targeted a diverse group of respondents across different demographics to understand various consumer perspectives.

Industry Experts and AI Technology Providers. Interviews were conducted with industry experts specializing in AI applications within the food sector, as well as with AI technology providers who have supported Cris-Tim in implementing AI solutions. These participants offered a broader perspective on the role of AI in the food industry and its potential for transforming business operations.

By using these diverse participants and research methods, the study aims to gather a comprehensive view of how AI is reshaping the food industry, particularly in terms of marketing and operations, and how companies like Cris-Tim are leveraging technology to stay competitive in a rapidly changing market.

Conclusion

The integration of Artificial Intelligence (AI) into marketing and operational processes has become a transformative force in the food industry, as evidenced by Cris-Tim's strategic adoption of these technologies. This research highlights the significant role AI plays in personalizing consumer experiences, optimizing production and supply chain management, and enhancing customer service. By leveraging AI to analyze consumer data, forecast demand, and streamline operations, Cris-Tim not only improves efficiency but also strengthens its competitive position in an increasingly digital marketplace.

The findings from this study demonstrate that AI is not just a tool for operational optimization but also a powerful enabler of consumer engagement. The ability to tailor marketing campaigns to individual preferences and provide real-time, personalized customer interactions has proven to be a critical factor in improving customer satisfaction and loyalty. Moreover, AI-driven insights into

demand forecasting allow for more accurate production planning, reducing waste and ensuring product availability.

However, the successful integration of AI also comes with challenges, including the need for continuous investment in technology, skilled personnel, and data management. The research suggests that companies must navigate these challenges carefully to maximize the potential of AI while maintaining a focus on long-term goals and consumer trust.

Ultimately, this study underscores that AI is not just reshaping marketing and operations in the food industry but also driving a broader digital transformation that is essential for staying competitive in the future. As the technology continues to evolve, companies like Cris-Tim, which embrace AI innovation, will likely lead the way in setting new industry standards for efficiency, consumer experience, and business growth. The future of the food industry is undeniably digital, and those who leverage AI effectively will be best positioned for success in a rapidly changing market.

References

1. Binns, A. (2018). *Artificial Intelligence in customer service: Optimizing experiences with AI tools*. International Journal of Business Innovation and Research, 17(1), 1-15.
2. Choi, T.-M., & Cheng, T. C. E. (2020). *Artificial intelligence in supply chain management: Theory and applications*. Springer.
3. Gentsch, P. (2020). *AI in marketing: A practical guide to the applications of artificial intelligence in marketing*. Springer.
4. Kotler, P. (2017). *Marketing Management*. Pearson Education.
5. Kumar, A., & Rahman, Z. (2021). *AI and machine learning in food industry: Applications and future directions*. Journal of Food Science and Technology, 58(7), 2545-2556.
6. Porter, Michael E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. Free Press.
7. Smith, M., & Gupta, A. (2019). *The role of AI in personalized marketing*. Journal of Marketing Research, 56(5), 823-835.
8. Zhang, Y., & Lin, S. (2022). *Leveraging AI in the food sector: From production to consumer experience*. Food Research International, 151, 110818.

FINAL CONCLUSION

The Multidimensional Impact of Artificial Intelligence and Digitalization on Scientific Paradigms: Reflections from a Transdisciplinary Conference

Sorina-Mihaela BĂLAN[1]

Abstract. *This article presents the outcomes of the interdisciplinary conference "The Impact of Digitalization and Artificial Intelligence on Scientific Fields and Society," held at the Serafim Duicu Library in Târgu Mureș. The event brought together students, high school teachers, university faculty, as well as representatives of NGOs and European partner companies. The conference served as a vibrant platform for dialogue on how artificial intelligence (AI) influences key areas such as law, psychology, geography, economics, and medicine. Its relevance was validated by both the quality of the sessions and the high levels of engagement and satisfaction expressed by participants.*

Keywords: *Digitalization, Artificial Intelligence, Interdisciplinary Conference, Scientific Fields, Societal Impact*

Introduction

The rapid development of artificial intelligence and digital technologies has led to profound transformations in society. AI is no longer a futuristic concept but a present-day force impacting scientific knowledge, professional practices, and the very structure of education and social life. This article reflects on the multidimensional nature of AI, based on the discussions and presentations held during a high-impact conference that gathered stakeholders from academia, civil society, and the private sector.

[1] Assoc. Prof. PhD, "Dimitrie Cantemir" University from Târgu Mureș. Email: bsorinamihaela@yahoo.com

AI Across Scientific Disciplines: Key Highlights

Law: Legal experts emphasized how AI generates unprecedented ethical and legal challenges. Algorithmic decision-making, data surveillance, and predictive justice were among the central topics debated. AI is pushing the boundaries of how law is interpreted and applied, calling for new regulatory frameworks that are both ethical and technologically sound.

Psychology: The integration of AI into mental health care has led to new tools for diagnosis and therapeutic support, including virtual counselors and emotion recognition systems. However, participants raised concerns about the preservation of privacy, confidentiality, and the human connection essential in therapy.

Geography and Environmental Sciences: AI's role in monitoring ecosystems, predicting climate patterns, and managing natural resources has proven invaluable. Geospatial analysis enhanced by AI is helping researchers and policymakers make more informed decisions in environmental protection and urban planning.

Economics: Digitalization and AI have redefined business models and labor markets. Automation, algorithmic trading, and predictive analytics were discussed in terms of both economic efficiency and the risks of job displacement. Students and experts explored how AI can be used ethically in entrepreneurship and innovation.

Medicine: AI-powered technologies are now central in diagnostics, personalized medicine, and surgical assistance. Yet, concerns were voiced regarding the depersonalization of care and the ethical management of patient data.

Conference Context and Objectives The event aimed to propose new approaches targeting fundamental scientific paradigms through the lens of AI, a technology that reshapes societal structures and epistemological frameworks. The hybrid format allowed physical participation at the "Serafim Duicu" Library and online attendance via Microsoft Teams. Facilities included a European-standard reading room, a multimedia space with internet-connected computers, free scanning services, interlibrary loan options, and customized bibliographic services.

Participants' Profile (Fig. 1.a and figure 1.b.)

Out of 34 respondents, 52.9% were speakers/presenters, 44.1% participants, and a smaller percentage were organizers. High school students also visited the university campus and engaged in discussions with faculty and students, contributing to a dynamic intergenerational exchange.

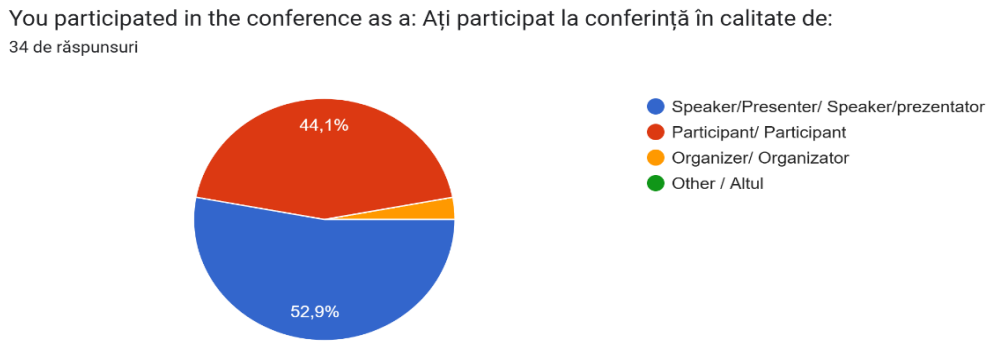


Fig. 1.a. Participants' Profile

The parthicipants role: 38.2% academic staff and researchers, 11.8% university students, 41.2% high school students and other participants.

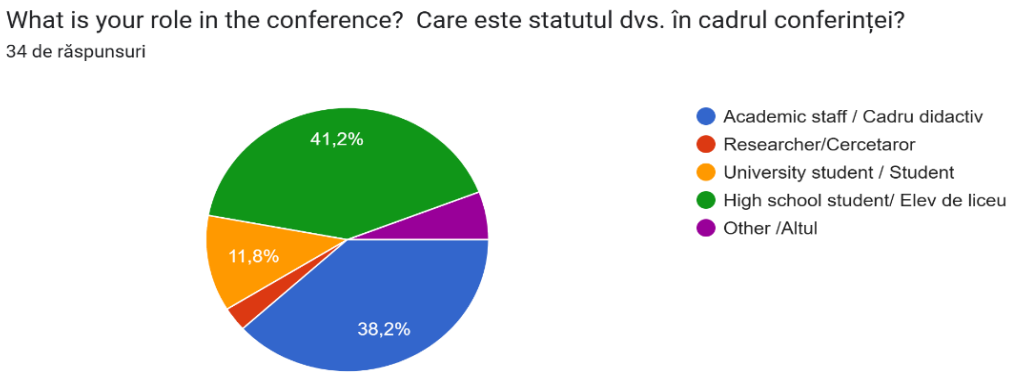


Fig. 1.b. The role of participants

Relevance of the Topic (Fig. 2) Over 90% of participants considered the theme relevant or very relevant to their field, confirming that the subject of AI resonates across disciplines and professional sectors.

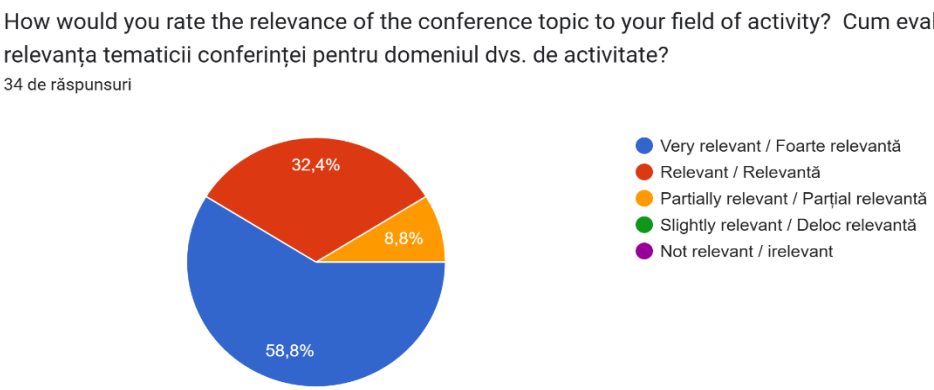


Fig. 2. Relevance of the Topic

Session Quality: The Projects Panel (Fig. 3) 76,5% rated the "Projects" session as excellent, with an additional 17.6 % rating it as good. Topics such as Erasmus+ projects, eTwinning, and AI applications were praised for their practical and innovative approach.

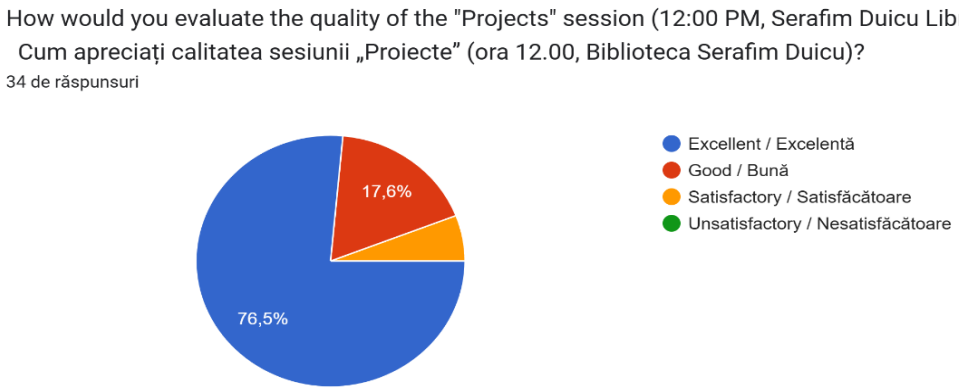


Fig. 3. Session Quality

Organization Evaluation (Fig. 4) The general organization of the conference received 5/5 stars from 52,9% of respondents, while 38,9% rated it 4/5. The results underline a well-coordinated and efficient event.

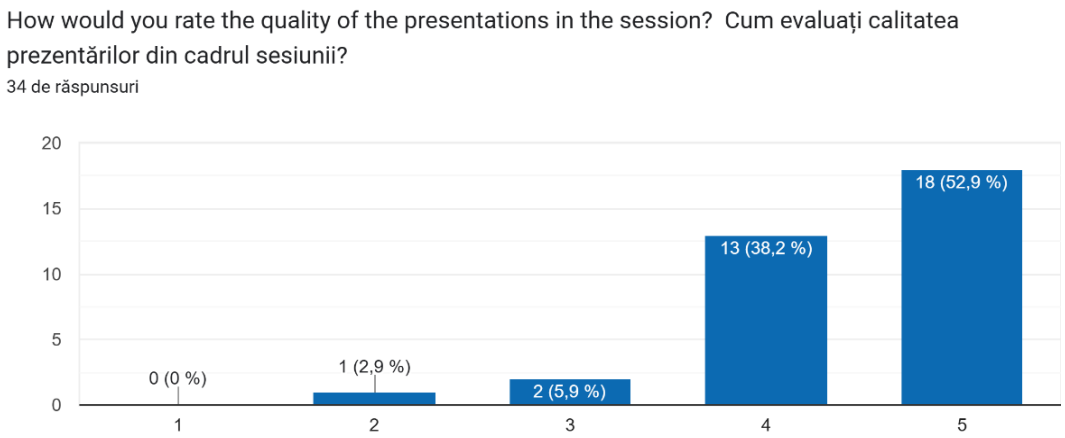


Fig. 4. Organization Evaluation

Use of Information (Fig. 5) Participants reported they would use the information primarily in the educational process (47.1%) and their professional activity (38.2%), followed by personal research (8.8%).

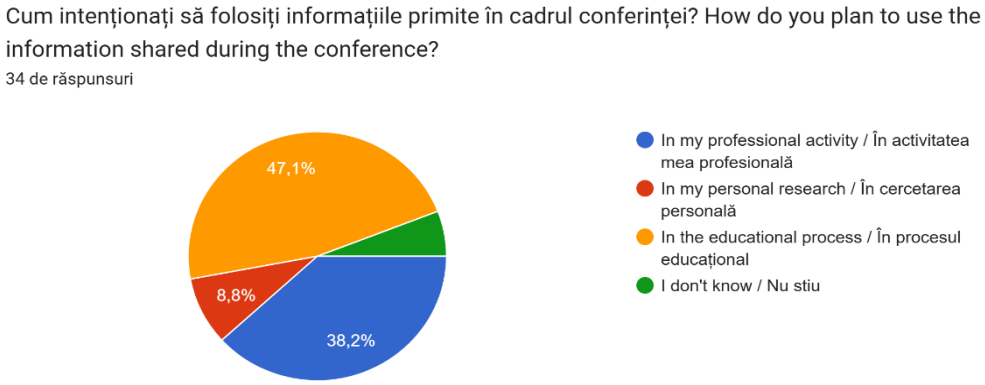


Fig. 5. Use of Information

Contribution to Professional/Educational Development (Fig. 6) Over 47.1 % indicated the information received would contribute significantly to their development, while 26.5% responded "a lot." 11.8 % A little.

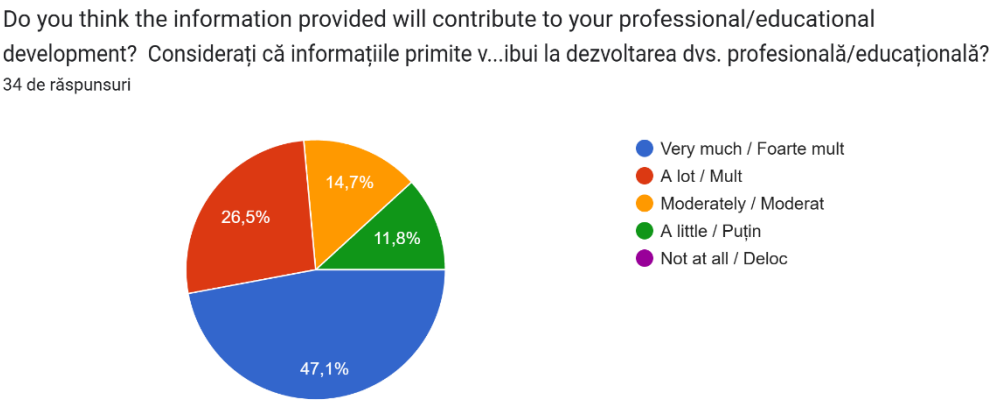


Fig. 6. Contribution to Professional/Educational Development

General Impressions and Feedback

Participants described the conference as "a successful event" and "an extraordinary experience." AI-themed presentations were particularly appreciated, along with Erasmus+ case studies and digital education projects. Participants gained new knowledge, discovered project ideas, and expanded their academic horizons.

Recommendations for Future Events

- To include interactive formats: workshops, brainstorming sessions, and hackathons.
- Explore underrepresented topics: AI's social impact, ethical implications, and human-technology interaction.
- Diversify the agenda with student-led sessions and panel discussions.
- Provide follow-up materials: summaries, presentations, and additional resources.

Answer at questions "What information about our university's educational programs would you find most helpful in making the right decision for your future? " (chart 1)

1. Career Prospects and Employment Opportunities

- Employment opportunities after graduation
- Workplace integration after completing studies
- Internship or career opportunities linked to the program
- Information about job placement
- Access to Erasmus programs and their benefits for students
- Entry grade requirements

2. Types of Programs and Further Education

- Undergraduate and Master's degree programs
- Master's studies
- Postgraduate programs
- Doctoral studies
- Profiles and specializations within the university

3. Curriculum and Content

- Modern teaching-learning methodologies, especially for students with special educational needs (SEN)
- Program overview: objectives, structure, and unique features
- Clear distinctions between similar programs
- Detailed course content: core and elective courses
- Practical components: internships, labs, or project-based learning
- Integration of current trends (digitalization, AI, sustainability).

4. Lifelong Learning and Skills Development

- Continuous professional development
- Leadership skill development
- Interest in a course on "Project Management"

5. Institutional Reputation and Personal Views

- The offer is very good

- I found all the necessary information on the website
- Its high specialization in Geography
- None – I do not intend to enroll at this university

6. Unclear or Ambiguous Responses

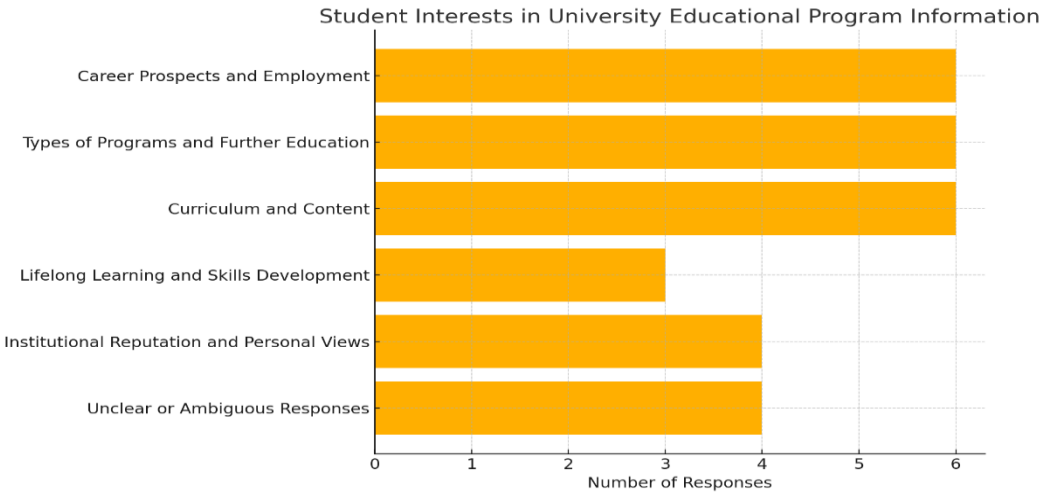


Chart 1. The number of responses grouped by key interest categories

Recommendation for the Conference Planning Team

Based on the participants' responses, the strongest interest lies in the domain of **Artificial Intelligence and Digital Transformation**, particularly its **impact on education**, ethics, and online safety. Closely following are suggestions tied to **educational innovation**, interactive methods, and the evolving future of teaching.

We recommend structuring the next conference around a central theme such as: **"AI, Innovation, and Education in a Rapidly Changing World"**

This could include panels on:

- AI tools in classrooms
- Ethical and safe digital environments
- Interactive and inclusive teaching strategies
- Career adaptation in the age of digitalization

Conclusion

The conference effectively captured current academic and societal priorities, highlighting the transformative role of **artificial intelligence**, **educational**

innovation, and **digital ethics** in shaping the future of learning. The diversity of proposed topics—from mental health and career guidance to digital safety and international project development—reflected a strong interest in **practical, inclusive, and forward-thinking approaches**. The high level of engagement and the variety of interactive formats (workshops, panels, and roundtables) provide a solid model for future events focused on **bridging technology, teaching, and talent** in meaningful, interdisciplinary ways. For more information about the conference, projects, and materials presented, please visit the official Padlet page: https://padlet.com/bsorinamihaela/the-impact-of-digitalization-and-artificial-intelligence-on--cfztojbupmc6ud87

Next Conference: "Ai, Innovation, and Education in a Rapidly Changing World" November 2025

You are warmly invited to join us for the upcoming edition of the international conference "AI, Innovation, and Education in a Rapidly Changing World," to be held in November 2025— a unique opportunity to explore the future of education through technology, ethics, and international cooperation.

Conference Title: "AI, Innovation, and Education in a Rapidly Changing World"

Tagline: Bridging Technology, Teaching, and Talent for Tomorrow

Date: (dd November 2025)
Format: 1-Day Academic Conference with Interactive Segments
Location: Dimitrie Cantemir University from Tagu Mures

Draft agenda:

08:30 – 09:00 | Registration & Welcome Coffee
09:00 – 09:30 | Opening Remarks

- University Rector / Vice-Rector for Quality Management and Projects
- Representative for International and Strategic Projects (including Erasmus+, Horizon 2025, Capacity Building)
- Student Council Representative
- Teachers/students from the high school sector

09:30 – 11:00 | Plenary Session
Keynote Panel: "AI in Education: Risks, Opportunities, and Ethics"
Invited speakers:

- Educational Technology Expert
- Digital Behavior Psychologist
- AI Ethics Researcher

- EdTech Startup Representative

Key Topics:

- The ethical use of AI in schools
- Changing roles of teachers and learners
- Ensuring digital safety in education

11:15 – 13:00 | Parallel Workshops *(Participants choose one)*

Workshop 1: Designing Interactive & Mirrored Courses
Focus: Student-centered pedagogy, technology integration.
Workshop 2: Digital Security and Online Conduct
Focus: Protecting digital identity, cyber safety protocols.
Workshop 3: Career Pathways: Choosing Profession Based on Personality & Skills
Focus: Psychological profiling, career counseling tools.
Workshop 4: International Project Budgeting
Focus: How to plan, budget, and manage Erasmus+, Horizon, and Capacity Building projects.

13:00 – 14:00 | Lunch Break & Networking

14:00 – 15:30 | Afternoon Panel Discussion Panel: "Globalization, Mental Health, and the New Classroom"

Discussion Topics:

- Student well-being in a digitalized world
- Inclusive classrooms in global settings
- The impact of global mobility and international project engagement

15:45 – 16:30 | Innovation Roundtable Theme: "Visions of Future Education: From Neurology to AI"

Interactive discussion with educators, researchers, and students.

16:30 – 17:00 | Closing Session & Certificates

Optional Add-ons:

- Poster session: Faculty and student research display
- Live demos: AI teaching tools in action
- Information booth for international projects and internships

Recommendation for the Conference Planning

Based on participants' responses, the strongest interest lies in the field of **Artificial Intelligence and Digital Transformation**, particularly regarding its

influence on education, ethical use, and digital safety. Close behind are topics on **educational innovation**, **interactive learning**, and the evolving nature of the teaching profession.

It is recommended to structure the next edition of the conference around the central theme: **“AI, Innovation, and Education in a Rapidly Changing World”**

Tagline: Bridging Technology, Teaching, and Talent for Tomorrow

The program could include:

- Panels on AI tools in education, ethics, and inclusion
- Workshops on international project management (Erasmus+, Horizon, Capacity Building), leadership development, and career guidance
- Discussions addressing both digital advancements and the socio-emotional well-being of students

This structure reflects both the academic interest and the practical needs voiced by the participants and lays a foundation for greater interactivity and international cooperation.

Looking ahead, the organizing team expresses its intention to host the November 2025 edition of the conference in collaboration with Professor Paolo Frignani, continuing the tradition of cross-border academic dialogue and innovation in education. The next edition aims to further develop the AI-education interface and strengthen international partnerships within the European academic community.

In an era of unprecedented technological advancement, the impact of digitalization and artificial intelligence on post-modern society is both transformative and profound. The rapid integration of these technologies into our daily lives has not only reshaped the way we work, communicate, and learn but has also challenged us to adapt to a dynamic and interconnected global environment. This volume, The Impact of Digitalization and Artificial Intelligence on the Development of Post-Modern Society: Challenges and Opportunities Through European Projects, seeks to explore these transformations through the lens of collaborative European initiatives.

At „Dimitrie Cantemir" University, we strongly believe in the power of strategic partnerships and innovative projects to address complex societal challenges. Through interdisciplinary collaboration and international cooperation, we aim to equip future generations with the skills and knowledge needed to thrive in an agile and digital world. This philosophy is reflected in our active participation in Erasmus+ projects such as E-STEAM and Future Work, which highlight the importance of equality, creativity, and adaptability in education and workforce development.

This publication also stands as a testament to the invaluable contributions of our colleagues in pre-university education, as well as the active involvement of students and even pupils in shaping the outcomes of these initiatives. By integrating diverse perspectives and fostering engagement across educational levels, we demonstrate the collective potential to innovate and address the challenges of digital transformation.

Assoc.Prof. **Sorina-Mihaela BĂLAN**

UNIVERSITAS CLAUDIOPOLITANA
PRESA UNIVERSITARĂ CLUJEANĂ
ROMANIA
PRESA UNIVERSITARĂ

ISBN: 978-606-37-2687-3