TWO BIRDS WITH ONE STONE: RESEARCH AND TEACHING IN INTERNATIONAL COLLABORATION USING BLENDED AND HYBRID METHODS

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ABSTRACT

One of the many consequences of the COVID-19 pandemic was the accelerated transformation of education, which necessitated the adoption of innovative methodologies to effectively integrate research and teaching. [1]. *This paper presents a complex hybrid and blended learning model that fosters international academic collaboration between university students and professors. The methodology was developed and implemented in a large-scale research study, culminating in the publication of Fights Against Segregation and Dropout – in 17 Countries, a comprehensive volume co-authored by 37 researchers, including 33 university students. The study explores how blended, and hybrid methods facilitate knowledge production while simultaneously serving as an educational tool, enabling students to actively engage in research. By merging teaching with real-world research experience, the methodology offers a novel approach to developing critical academic and professional skills. The collaborative process involved digital platforms, synchronous and asynchronous communication, and interdisciplinary teamwork across multiple countries.*

Findings suggest that integrating research-based learning (RBL) within a hybrid and blended framework enhances student engagement, fosters global academic networks, and contributes to the development of practical solutions for pressing educational challenges, such as dropout and segregation. The model presents a scalable and adaptable approach that universities can implement to strengthen researchoriented education in diverse academic fields.

This article will provide insights into the innovative methodology, key results, and best practices derived from the international research collaboration. It will also address challenges and recommendations for institutions aiming to integrate blended and hybrid models into their research and teaching strategies.

KEYWORDS

Hybrid learning, blended learning, international collaboration, research-based teaching (RBL), dropout prevention, segregation, student engagement, digital education, critical thinking, innovative teaching methodologies

Bibhu Dash et al: IOTBC, NLPAI, BDML, EDUPAN, CITE - 2025
pp. 147-165, 2025. IJCI – 2025 DOI:10.5121/ijci.2025.140210

1. INTRODUCTION

The COVID-19 pandemic brought unprecedented challenges to higher education, accelerating the need for innovative teaching methodologies that seamlessly integrate research and learning. Traditional classroom models proved insufficient [2] [3] in addressing the complexities of an increasingly digital and interconnected academic environment. This shift called for hybrid and blended learning approaches that not only facilitate knowledge acquisition but also actively engage students in meaningful research.

This paper presents a novel framework that merges research and teaching through international collaboration, focusing on the methodology applied in the large-scale study *SEGREGATION and DROP-OUT: Inequity in Education – Research and Study Compilation (2025)*. The study involved 37 researchers, including 33 university students, working together across multiple institutions and disciplines.
Through hybrid and blended learning models, students became co-creators of knowledge, contributing to research outcomes while developing essential academic and professional skills. The next some sections will elaborate on the methodology, key findings and challenges encountered during the implementation of this approach. By analyzing the impact of integrating research into higher education through hybrid learning, this study offers valuable insights for universities seeking to enhance student engagement and foster interdisciplinary collaboration.

1.1. Objective Viewpoints: The Role of Hybrid and Blended Learning in Research and Teaching Integration

The integration of research into teaching is a fundamental shift in modern higher education, particularly in the wake of the COVID-19 pandemic. This transition has prompted universities to explore hybrid and blended learning models as tools for enhancing both student engagement and academic output. The objective of this paper is to critically examine how these learning methods can support and strengthen the connection between research and education, focusing on the outcomes of the SEGREGATION and DROP-OUT study.

Hybrid and blended learning environments present unique opportunities to bridge the gap between theoretical knowledge and practical application [4]. By combining face-to-face interaction with digital learning tools, these models provide flexibility and accessibility, enabling students to engage with research on a deeper level. In the case of the SEGREGATION and DROP-OUT study, this approach allowed for collaborative research across geographical boundaries, engaging students from various disciplines and backgrounds in the process of knowledge creation. Beyond the collection of empirical data, the objective was to cultivate critical thinking, creativity, and collaborative problem-solving skills among students. The integration of research into higher education through hybrid and blended learning methodologies is particularly significant, as these approaches foster a more interactive, studentcentered learning experience. Traditional models often place students in passive roles, with limited opportunities to actively engage in research, critical inquiry, or interdisciplinary collaboration. Hybrid and blended approaches, however, empower students to take ownership of their learning and research contributions. By working collaboratively on real-world issues, they gain hands-on experience and develop the skills required for academic success and future professional careers.

Moreover, the future of these methodologies is poised to revolutionize higher education by creating dynamic, adaptive learning environments. As technological advancements continue to reshape the academic landscape, hybrid and blended learning models will evolve to incorporate more immersive and interactive experiences.

These methodologies not only address the immediate challenges posed by crises like the pandemic but also present long-term solutions to the increasing demands for flexible, inclusive, and innovative education. Their potential to facilitate global collaboration, enable continuous learning, and foster interdisciplinary approaches makes them critical components of the future of higher education.

This section will explore how the implementation of these innovative teaching methodologies can create a more dynamic learning environment, offering students the opportunity to become active participants in research. It will also outline the broader goals of integrating research into the academic curriculum, including the development of essential skills for future professionals and researchers. Furthermore, the subchapter will analyze the objectives of the SEGREGATION and DROP-OUT study [5], the anticipated benefits of using hybrid and blended learning, and the broader implications of this approach for higher education institutions looking to improve student engagement, collaboration, and research integration. Ultimately, it will highlight the promising future of hybrid and blended learning methodologies as a transformative force in higher education.

1.2. Personal Inner Thoughts as a Preface

When I was 4-5 years old in kindergarten, I started to wonder what makes the world work? How is it that farmers in the countryside produce all the delicious food and we buy it here in downtown Budapest at the grocery store? On TV, people make shows and cartoons that we can watch in the afternoons and evenings. They don't even know us, so why are they entertaining us? Can money explain everything? Does Money really make the Earth go round (as it in the Cabaret)? There must be something more!

When I was a little girl in school and we were on a hike or a playground, I always wondered how going up a climbing frame or up a mountain and then jumping off or climbing down symbolized human life, our destiny? When I got my first video games of my life, I was looking for parallels between my future life, reality and the game, in the struggles, the interesting tasks and scoring opportunities. I felt that these questions were exciting and important! I even thought, as a 6-8-year-old child, to be careful not to forget these thoughts as an adult, in case I could answer myself. For example, when my former students apply the **strategic analytical tools** I taught them—whether to gain deeper insight into business competition, to build a successful organization, or to manage a complex project with precision and foresight—it will, in a way, be **my success too**.

There is something profoundly fulfilling in ‘knowing that the knowledge’ I passed on continues to live through their decisions, analyses, and innovations. When they use **game theory** to anticipate market moves, **organizational life-cycle models** to navigate growth challenges, or **economic forecasting methods** to mitigate risks, they are not just executing learned concepts— they are **thinking critically, strategically, and systematically**.

The ultimate reward of teaching is seeing students grow into independent thinkers who, long after leaving my lectures, still carry forward the tools and frameworks they once encountered in my classroom. And if, in their moments of success, they pause for a brief second to recall where they first encountered these ideas, then I know I have made a lasting impact—not just on their knowledge, but on their way of seeing and shaping the world.

2. METHODOLOGY

Maybe I should have written three birds in the title, not two (but I will go back to this in the 3rd chapter). Firstly, I would like to present my method teaching for skills development, secondly, the applied research methods that has produced tangible and substantial results and finally, I will focus on the case itself, i.e. the course I implemented in the academic year 2024

The hybrid and blended methodology was designed to maximize student involvement[6] in an authentic research process while ensuring flexibility in learning.

Table 1. Used basic methodologies from project and student development perspective

Aspect	Project Perspective	Student Development Perspective
Teaching Results: Skill Development	The project integrates research-based teaching to enhance critical thinking, collaborative, and methodological skills through hands-on research. The structured methodology ensures that students actively engage with academic knowledge production.	Students develop analytical, problem-solving, and interdisciplinary collaboration. They improve their ability to synthesize information, critically assess sources, and work within academic frameworks.
Applied Research Method Results	The hybrid and blended methodology facilitates large-scale research, combining digital collaboration tools with structured academic mentoring. It ensures flexibility while maintaining rigorous academic standards.	Students gain expertise in qualitative and quantitative research methods, academic writing, and data interpretation. They experience real-world research workflows, improving their professional competencies and adaptability.
Case Study: Course Implementation (2024)	The course served as a testbed for integrating research and teaching, culminating in the internationally collaborative research publication of *SEGREGATION and DROP-OUT: Inequity in Education – Research and Study Compilation, 2025*. It demonstrated the scalability and contributed to a high-impact hybrid methodology.	Through participation in an research project, students built confidence in their academic abilities, expanded their global networks, and effectiveness of the publication.

2.1. The Core Components of the Research-Based Teaching Model

The methodological framework underpinning this model is predicated on a synergistic fusion of digital innovation, interdisciplinary cooperation, and student-centered research engagement. Designed to facilitate an authentic research experience while maintaining pedagogical flexibility, the model integrates several key elements that collectively contribute to its efficacy.

Blended Learning is an educational approach that combines traditional face-to-face instruction with online learning components. This model integrates digital tools, such as Learning Management Systems (LMS), video lectures, discussion forums, and online assessments, alongside in-person interactions like classroom discussions, hands-on activities, and mentorship. The goal of blended learning is to optimize flexibility, engagement, and personalized learning experiences while maintaining the benefits of direct student-teacher interaction.

Hybrid Learning is a more flexible and adaptive model that merges in-person and online learning in a seamless and interchangeable manner. Unlike blended learning, which follows a structured mix of online and offline components, hybrid learning allows students and instructors to switch between physical and digital learning environments dynamically. This model is often used in research-driven education, where students engage in collaborative projects, virtual teamwork, and synchronous or asynchronous interactions across geographical and institutional boundaries.To emphasize the advantages of hybrid and blended teaching while maintaining consistency, here are refined versions of your striking opening questions:

1. What if learning, researching, and publishing were not separate tasks, but seamlessly integrated into one dynamic, collaborative process through hybrid and blended methods?
2. Can we empower students to soar—not just in acquiring knowledge, but in actively creating, collaborating, and innovating across digital and physical learning spaces?
3. What happens when education moves beyond passive absorption and becomes an interactive, research-driven experience where students contribute to real-world knowledge?
4. If knowledge is power, why limit students to consuming it when hybrid and blended approaches can transform them into active producers and co-creators?
5. How can we leverage hybrid and blended learning to break down academic silos, making research and teaching a truly interactive and globally connected experience?

Each of these questions reinforces the advantages of hybrid and blended learning, emphasizing interactivity, collaboration, and real-world application.

Both methodologies emphasize **active learning, digital integration, and collaborative engagement**, making them particularly effective in higher education, international research collaboration, and professional training contexts. In your case, they serve as the foundation for integrating **teaching, research, and academic writing**, ensuring that students do not merely absorb knowledge but actively create and contribute to it.

Digital Collaboration Platforms

The utilization of various Learning Management Systems (LMS), video conferencing tools, and cloud-based repositories played a pivotal role in fostering seamless communication, knowledge dissemination, and data-sharing among participants. These digital infrastructures enabled realtime and asynchronous interactions, ensuring accessibility and continuity in research engagement across geographical and institutional boundaries[7].

Synchronous and Asynchronous Learning Modalities

A blended approach combining real-time virtual discussions, frontal lectures, and independent research tasks was employed to accommodate diverse learning preferences and temporal constraints[8]. This dual modality not only provided structural flexibility but also reinforced self-directed learning, allowing students to engage with research materials at their own pace while benefitting from interactive, discursive elements.

Interdisciplinary and International Teamwork

A distinguishing feature of the model was its emphasis on transdisciplinary and cross-border collaboration. Researchers from diverse academic backgrounds and institutions engaged in joint data collection, analysis, and academic writing, fostering intellectual cross-pollination and enriching methodological rigor. The integration of multiple disciplinary perspectives expanded

the analytical scope of the research while simultaneously exposing students to varied epistemological approaches.

Student-Led Research Initiatives

At the heart of this framework was an emphasis on student agency. Recognizing the importance of experiential learning, the SEGREGATION and DROP-OUT study prioritized student-led research initiatives, positioning students as active contributors to scholarly inquiry rather than passive recipients of knowledge. Under expert mentorship, participants took on key roles in the research process, from formulating research questions to conducting systematic literature reviews and engaging in empirical fieldwork. This participatory approach not only reinforced theoretical understanding but also cultivated essential research competencies that extend beyond the academic setting.

One of the primary benefits of student-led research is the development of a deeper appreciation for methodological rigor and the iterative nature of knowledge production. By immersing themselves in real-world data collection, analysis, and interpretation, students gained first-hand experience in dealing with the complexities and uncertainties inherent in empirical research. Furthermore, the process of refining research questions and critically engaging with existing literature honed their analytical skills, fostering intellectual autonomy and academic confidence.

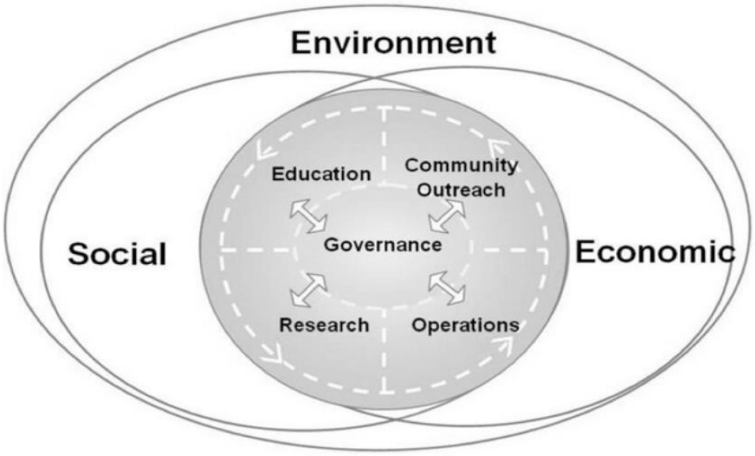

Figure 1. Student-led action for sustainability in higher education: Conceptualization of sustainability, Adopted from Bieler & McKenzie (2017)

The provided figure (No. 5) illustrates a holistic framework for addressing educational and social challenges by integrating governance, education, research, community outreach, and operations within broader social, economic, and environmental contexts. Following this model, students engaged in research aimed at identifying key issues related to school segregation and dropout rates, seeking to formulate actionable policy recommendations. By recognizing the interconnected nature of social and economic factors, they explored governance mechanisms that could drive institutional change, emphasizing inclusive educational practices and equitable resource distribution. The research process encouraged interdisciplinary collaboration, allowing students to analyze the role of education in fostering social cohesion while considering operational efficiencies that enhance school performance. Moreover, the emphasis on community outreach underscored the importance of stakeholder engagement, ensuring that policy proposals were grounded in the lived experiences of educators, students, and families. This structured approach enabled students to move beyond theoretical analysis, translating their findings into practical strategies aimed at mitigating systemic inequalities and fostering a more inclusive and sustainable

educational environment. This hands-on involvement not only deepened their understanding of research methodologies but also enhanced their capacity for critical inquiry and problem-solving.Beyond skill acquisition, the initiative also emphasized collaborative knowledge creation. Working alongside peers and faculty members from diverse disciplines, students were exposed to interdisciplinary perspectives, enhancing their ability to synthesize information from multiple sources. This collaborative environment mirrored professional research settings, preparing students for future roles in academia, policy-making, and industry.

By integrating student-led research into hybrid and blended learning frameworks, this initiative demonstrated the potential of an educational model that is not only knowledge-driven but also student-empowering[9]. The implications of such an approach extend to broader pedagogical reform, advocating for a shift from passive instruction to active participation. In doing so, it underscores the evolving role of higher education in fostering independent thinkers, problemsolvers, and future innovators.

Iterative Feedback and Peer Review Mechanisms

The model incorporated a robust feedback loop through structured mentorship sessions and peer-review processes. Regular engagement with faculty and collaborative critique among students ensured the refinement of research outputs, the cultivation of academic writing competencies, and the enhancement of analytical precision. This iterative evaluative framework fostered a culture of scholarly rigor and continuous intellectual growth.

By synthesizing these core components, the research-based teaching model cultivated an immersive and participatory learning environment. The approach not only honed students' analytical and problem-solving capacities but also instilled essential collaborative skills, preparing them for advanced academic pursuits and professional research engagements.

Table 2. Summarizing the key components of the research-based teaching model

Component	Description
Digital Collaboration Platforms	Utilization of LMS, video conferencing tools, and cloud-based repositories to facilitate communication, knowledge sharing, and data management.
Synchronous and Asynchronous Learning	Blended learning approach combining live discussions, recorded lectures, and independent research assignments for flexibility and engagement.
Interdisciplinary and International Teamwork	Collaboration among researchers from diverse academic disciplines and institutions, enhancing methodological rigor and intellectual exchange.
Student-Led Research Initiatives	Active student involvement in formulating research questions, conducting literature reviews, and engaging in empirical fieldwork under faculty supervision.
Iterative Feedback and Peer Review	Structured mentorship sessions and peer-review processes to refine research quality, develop academic writing skills, and enhance analytical precision.

By integrating these elements, the methodology aimed to create a dynamic and inclusive learning environment that strengthened students' analytical, problem-solving, and collaborative skills.

3. EXPANDING THE SCOPE: THREE BIRDS, NOT TWO

As I mentioned before: Perhaps the title should mention three birds, not two. First, I will introduce my teaching and skill-building approach, followed by the research method that yielded significant results. Lastly, I will examine the 2024 course implementation as a case study.

The team that joined the course - partly compulsory and partly optional - started with 73 participants.This semester followed a structured, student-centered approach. Initially, students selected their own research topics based on a reflective process that combined their hobbies, interests, strengths, and career aspirations. This self-exploration enhanced their self-awareness and provided a personalized foundation for academic inquiry. By aligning research topics with their individual motivations, students engaged deeply in the learning process, often acquiring research skills intuitively. Throughout the course, they progressively mastered research methodologies through guided instruction, demonstration, and hands-on practice. This approach fostered intrinsic motivation, ensuring that students not only developed essential academic competencies but also cultivated a meaningful connection to their chosen fields of study.

In the second phase, I assigned a common research topic to all students. Collaborating with the entire research department, we developed a unified methodology to ensure consistency across individual projects. A key aspect of this approach was that each student conducted their research in their own hometown, allowing for both localized insights and broader comparative analysis.

This structure enabled students to apply standardized research techniques while exploring the specific dynamics of their local contexts. As a result, the findings were not only methodologically aligned but also provided a rich dataset for comparative evaluation, reinforcing both analytical rigor and practical applicability in real-world settings. There was, however, another, more constrained research topic, which the more motivated students who wanted to learn and develop could choose as a plus course assignment. They examined the educational system and problems of their hometown, focusing on discrimination problems, the situation of segregation and practices to combat drop-outs.

In fact, stories of injustice in mainstream education—discrimination, socioeconomic disparities, teacher favoritism, mobbyings and exclusion—leave lasting impressions on students. These experiences, whether directly or indirectly encountered, remain vivid in their memories. Investigating these issues in a structured, scientific manner was both engaging and meaningful for them.

Through this process, they unconsciously developed the ability to critically analyze everyday social phenomena, reframing them into researchable questions. They acquired the skills to translate real-life experiences into the language of science, constructing a complex and methodologically sound research framework. This transformation not only deepened their academic understanding but also empowered them to approach societal challenges with analytical rigor and scholarly precision.

3.1.Teaching and Skills Development Method

The pedagogical approach employed in this course was deeply rooted in experiential learning and research-based education. Rather than adhering to traditional lecture-based instruction, the methodology emphasized active student participation, problem-solving, and project-based learning. As I mantioned, almost without noticing it, they learnt how to think through the

phenomena of everyday life in depth and 'translate' them into the language of science, to develop a complex methodology of research. Key elements of this method included:

- **Collaborative Learning Environments:** Students worked in interdisciplinary teams, engaging in peer-to-peer knowledge exchange and developing critical thinking skills[10].
- **Hybrid and Blended Learning Integration:** A combination of in-person and virtual sessions enabled a flexible learning experience that accommodated diverse student needs.
- **Mentorship and Guidance:** Faculty members acted as facilitators rather than sole sources of knowledge, guiding students through the research process and encouraging independent inquiry.
- **Real-World Application:** Course assignments and projects were directly connected to contemporary issues in education, ensuring that theoretical concepts were reinforced through practical application.

3.2.Applied Research Method

To ensure that students gained not only theoretical knowledge but also practical research competencies, the course integrated an applied research component.
The research method combined both qualitative and quantitative approaches, structured as follows:

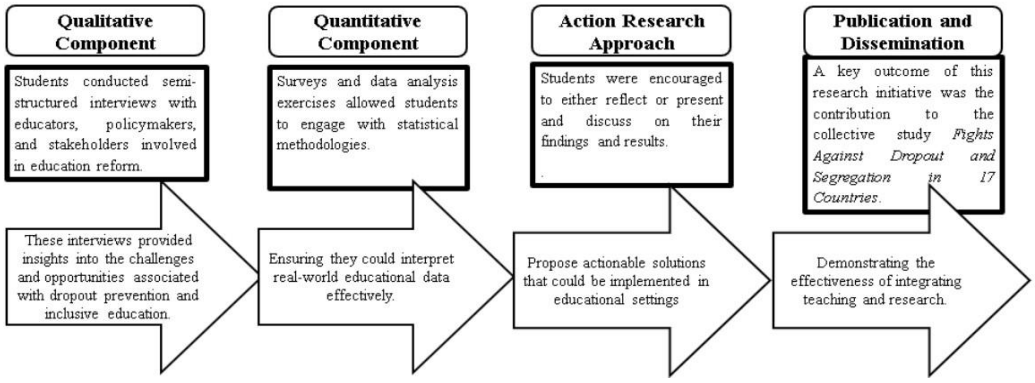

Figure 2. Analysing Process and Effectiveness of Applied Research Method

The research model employed in this study was characterized by a balanced integration of qualitative and quantitative methodologies, fostering both theoretical depth and empirical rigor. By engaging students in real-world data collection and analysis, the approach not only strengthened their methodological competencies but also contributed to meaningful scholarly discourse on educational inequality.

A crucial aspect of this methodology was its qualitative component, which centered on semistructured interviews conducted with key stakeholders in education. Students engaged in indepth discussions with educators, policymakers, and institutional representatives, critically examining the systemic factors contributing to dropout rates and segregation. This process enabled them to develop an analytical perspective, uncovering the complex interplay between social, economic, and institutional determinants of educational inequity. The qualitative approach allowed for a nuanced understanding of the lived experiences of marginalized student populations, providing insights that would have remained obscured through purely numerical analysis.

Complementing this qualitative dimension, the research incorporated a quantitative component, which equipped students with the necessary tools to engage with statistical methodologies. Through survey design and data analysis exercises, they explored large-scale educational datasets, learning how to interpret trends, measure disparities, and evaluate the effectiveness of policy interventions. This dual-method approach ensured that students not only gained practical research skills but also cultivated the ability to critically assess the limitations and implications of statistical findings in the context of education policy.

Another defining feature of the applied research methodology was its action research approach, emphasizing reflexivity and problem-solving. Rather than merely identifying issues, students were encouraged to propose evidence-based, actionable solutions aimed at mitigating dropout rates and fostering inclusivity in schools. This iterative process of analysis and intervention reinforced the principle that research should not remain confined to academic discourse but should actively contribute to societal change. By linking theoretical inquiry with practical application, students developed a research mindset that extended beyond passive observation to proactive engagement.

Figure 3. Students' Engagement Levels *(Deschaine-Whale Model 2017)*

The final stage of this methodological framework was the publication and dissemination of research findings. A particularly significant outcome of the initiative was the collective scholarly contribution to the volume Fights Against Dropout and Segregation in 17 Countries, a publication that not only documented empirical findings but also demonstrated the pedagogical value of integrating research within the teaching process. The opportunity for students to see their work materialize in a broader academic context served as a powerful motivation, reinforcing their sense of agency and scholarly identity.

Through this structured and multi-faceted approach, the research methodology successfully bridged the gap between education and practice, enabling students to develop advanced analytical skills while directly contributing to policy-relevant discussions. The iterative, interdisciplinary, and solution-oriented nature of this research model highlights its potential for scalability and adaptation across various academic and institutional contexts, reaffirming its effectiveness in fostering both intellectual growth and social impact.

3.3. The Case: The Course Implementation in 2024

The course, designed and executed during the 2024 academic year, was an ambitious endeavor aimed at bridging the gap between theoretical knowledge and applied research.

Table 3. Course Design: Applied Research in Education – From Theory to Practice

Week	Theoretical Lecture	Practical Research Tasks	Work Mode
Week 1	Introduction to Educational Research: Formation of research groups (3 Research paradigms, qualitative vs. students/group), brainstorming and quantitative methods, ethics in selecting a common research topic based education research. on shared interests.		**Group Work**
Week 2	Qualitative Research in Education: Semi-structured interviews, thematic coding, focus groups.	Groups design interview questions and conduct pilot interviews with peers or experts.	**Group Work**
Week 3	Quantitative Research in Education: Survey design, sampling, statistical methods.	Groups develop and distribute surveys, collecting data related to their chosen analysis topic.	**Group Work**
Week 4	Mixed-Methods Research & Action Research: Combining qualitative and quantitative data, research reflexivity.	Groups analyze collected data, interpret findings, and refine research focus.	**Group Work**
Week 5	Academic Writing & Peer Review: Structuring research papers, literature review techniques, citation norms.	Groups prepare and present research findings, receiving feedback from peers and faculty.	**Group Work**
Week 6	Introduction to the Main Research Topic: Segregation and Drop-out in Education.	Students individually select subtopics within segregation/drop-out, conduct initial literature review.	**Individual Work**
Week 7	Fieldwork Methods & Data Collection Strategies: Conducting interviews and surveys with stakeholders.	Students conduct interviews with teachers, students, policymakers, or NGOs.	**Individual Work**
Week 8	Data Analysis Techniques: Thematic coding for qualitative data, statistical tools for quantitative research.	Students analyze qualitative and quantitative findings from their research.	**Individual Work**
Week 9	Policy Impact & Practical Implications: How research informs actionable recommendations for education policy. educational institutions.	Students translate research findings into	**Individual Work**
Week 10	Research Dissemination & Presentation Skills: Writing for academic journals, conference presentations.	Students draft structured research reports, integrating theoretical and empirical insights.	**Individual Work**
Week 11	International Perspectives on Segregation & Drop-out: Comparative research findings, global case studies. global education trends.	Students prepare presentations on their findings, aligning them with studies and	**Individual Work**
Week 12	Final Presentations & Policy Proposals: Engaging stakeholders and influencing change.	Students present their final research projects and propose policy interventions.	**Individual Work**

This structure ensures a **progressive development** from group-based exploratory research to **individual in-depth inquiry**, fostering **both collaborative and independent research skills** while maintaining a strong theoretical foundation. Conducted in collaboration with multiple international institutions, the course structure included:

- **Interactive Lectures and Workshops:** Experts from various countries delivered guest lectures, providing students with global perspectives on dropout prevention and segregation.
- **Fieldwork and Data Collection:** Students engaged in first-hand data collection, conducting interviews and surveys in diverse educational environments.
- **Cross-Cultural Exchange:** The international nature of the course facilitated knowledge sharing across different educational systems, enriching students' understanding of comparative education.
- **Final Research Projects:** Each student individually and in team produced research reports, contributing to the broader study. We also organized an international on-line scientific conference and published a research book. Tangible outcomes an results served us as a reward of our common work.

The course's pedagogical framework was designed to immerse students in a dynamic and interactive learning experience, balancing theoretical knowledge with hands-on research. By integrating international expertise, empirical fieldwork, and collaborative inquiry, the curriculum fostered a deep, critical engagement with the challenges of dropout prevention and educational segregation.

A cornerstone of the course was the interactive lectures and workshops, which brought together experts from diverse educational and policy backgrounds. These guest speakers, hailing from different countries and institutional contexts, offered valuable insights into how dropout and segregation manifest in various educational systems. This comparative perspective encouraged students to move beyond local case studies and consider broader, transnational trends in education policy and reform. The interactive nature of these sessions, with structured debates, case study discussions, and real-time data analysis, ensured that students actively engaged with the material rather than passively absorbing information.

Beyond the classroom, fieldwork and data collection provided students with first-hand research experience, grounding theoretical concepts in empirical reality. Through structured interviews with teachers, students, policymakers, and non-governmental organizations, participants gained qualitative insights into the lived experiences of marginalized student populations. Surveys and statistical data collection further allowed them to integrate quantitative methodologies into their research. This direct engagement with educational stakeholders not only deepened their analytical skills but also cultivated an appreciation for the ethical complexities of educational research. One of the most enriching dimensions of the course was its cross-cultural exchange. Given the international composition of the student body and faculty, the program created an environment where diverse educational traditions and policy approaches could be examined in dialogue with one another. Students shared insights from their respective national education systems, leading to a comparative understanding of best practices and systemic challenges in addressing segregation and dropout. The collaborative nature of the course encouraged critical reflection on how context-specific solutions might be adapted to different educational settings.

The culmination of the course was the final research projects, which served as a tangible demonstration of students' research competencies. Working either in small teams or independently, participants produced rigorous, methodologically sound reports that contributed to the broader academic discourse on educational inequality. These projects were not merely academic exercises but were positioned within a larger scholarly endeavor—namely, the collective study Fights Against Dropout and Segregation in 17 Countries. By situating student research within an ongoing international study, the course reinforced the notion that academic inquiry can have meaningful, real-world impact.

Through this integrative and interactive pedagogical design, the course succeeded in cultivating not only methodological proficiency but also a **research-oriented mindset** that empowered students to **engage critically with pressing educational challenges**.

3.4.Impact and Future Directions

The integration of teaching, skills development, and applied research resulted in measurable learning outcomes. Students not only acquired theoretical knowledge but also developed competencies essential for academic and professional success, such as critical analysis, data interpretation, and cross-cultural collaboration. The success of this course suggests the need for further expansion, with potential applications in other disciplines and research areas.

Moving forward, the model can be refined by incorporating additional digital tools for collaboration, expanding interdisciplinary partnerships, and enhancing faculty training to support research-based teaching. By continuing to innovate and adapt, this approach can serve as a blueprint for higher education institutions aiming to foster deeper engagement between research and pedagogy[11].

4. FINDINGS

The implementation of this hybrid and blended learning model produced several significant academic and pedagogical outcomes, highlighting its potential as a transformative approach to research-based teaching.

One of the most striking results was the heightened level of student engagement. By actively participating in a real-world research process, students reported increased motivation and a deeper comprehension of research methodologies. Unlike traditional, theory-heavy courses, this model provided students with hands-on experience, making the learning process more immersive and personally meaningful. The intrinsic connection between their research topics and their own interests or social experiences further reinforced their commitment to the work, demonstrating that personal relevance is a key driver of academic engagement.

Additionally, the model significantly enhanced students' research competencies. Through structured guidance and independent inquiry, participants improved their skills in literature review, data collection, analysis, and academic writing. The iterative nature of the research process allowed them to refine their methodological approaches, critically evaluate sources, and produce scholarly work that met professional academic standards. As a result, students developed not only technical research skills but also the intellectual discipline necessary for higher-order thinking and evidence-based argumentation. Another major benefit of this model was its facilitation of global academic networking. The international scope of the project enabled students and faculty to collaborate across borders, fostering cultural exchange and professional connections. Exposure to diverse perspectives and methodologies enriched their academic experience and prepared them for participation in a globalized research community. The project also demonstrated that digital platforms and hybrid methodologies could be effectively leveraged to support international academic partnerships, even in the absence of physical mobility programs.

The implementation of this model yielded several noteworthy outcomes (the key findings and their implications):

Table 4. Key results of the study

Key Finding	Description	Implications
Increased Student Engagement	Active participation in real-world research led to higher motivation and deeper understanding of more accessible and engaging. methodologies.	Strengthens student ownership of learning, making research methods a
Enhanced Research Skills	Students improved in literature review, data analysis, and academic writing.	Develops critical academic competencies necessary for higher education and professional research.
Global Academic Networks	International collaboration facilitated cultural exchange and professional networking.	Prepares students for global research environments and interdisciplinary cooperation.
Practical Contributions to Education Policy	Findings on dropout prevention and segregation informed policy discussions.	Supports evidence-based decisionmaking in educational institutions and government policy.
Scalability and Adaptability	The methodology proved effective across disciplines and institutional contexts.	Provides a flexible and replicable model for integrating research-based learning into higher education.

Increased Student Engagement: Participants reported higher motivation and deeper understanding of research methodologies due to their active role in the study.
Enhanced Research Skills: Students improved their abilities in literature review, data analysis, and academic writing.

Global Academic Networks: International collaboration fostered cultural exchange and professional networking opportunities for both students and faculty.
Practical Contributions to Education Policy: The study's findings on dropout prevention and segregation informed policy discussions and institutional strategies in multiple countries. Scalability and Adaptability: The approach demonstrated feasibility across various disciplines and institutional contexts, suggesting broader applicability in higher education.

Beyond the direct academic benefits, the research produced tangible contributions to education policy. The findings on dropout prevention and segregation were disseminated among policymakers and institutional leaders, informing discussions on equity in education. By grounding these debates in empirical evidence, the study underscored the role of academic research in shaping policies that address systemic educational inequalities.

Finally, one of the most compelling conclusions drawn from this initiative was its scalability and adaptability. The model proved to be effective across various academic disciplines and institutional settings, suggesting that it could be broadly implemented in higher education. Its flexible structure—combining independent research with collaborative inquiry, digital engagement with in-person interactions—makes it well-suited for diverse learning environments and adaptable to different educational objectives.

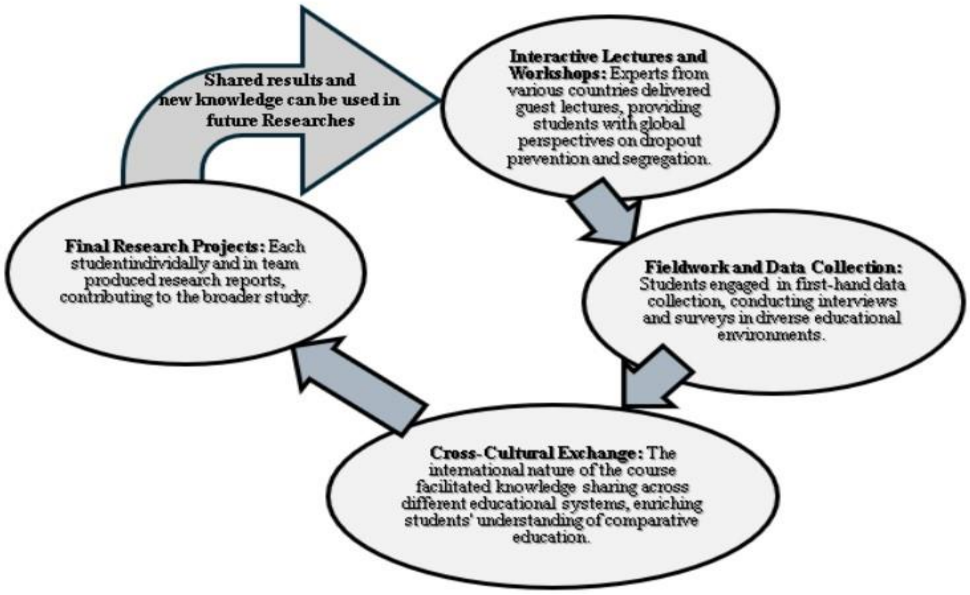

Figure 4. Process of Innovative Pedagogical Approaches in Research-Based Learning

The diagram illustrates a structured approach to research-based learning, emphasizing interactive learning, empirical investigation, and cross-cultural engagement. The process begins with **interactive lectures and workshops**, where experts from various countries provide insights into dropout prevention and segregation, equipping students with a global perspective. This foundational knowledge informs the next phase, **fieldwork and data collection**, where students actively gather qualitative and quantitative data through interviews and surveys within diverse educational settings. The incorporation of a **cross-cultural exchange** dimension ensures that students engage in comparative educational analysis, broadening their understanding of different schooling systems and policies. These phases culminate in **final research projects**, where students synthesize their findings into reports, contributing to a larger academic discourse. Ultimately, the results and insights generated through this process are not only applicable to the immediate study but also serve as a valuable foundation for future research, reinforcing a cyclical model of knowledge production and application in education policy and practice. Overall, the integration of research-based learning within a hybrid and blended framework not only enhanced students' academic development but also contributed to meaningful societal discussions. By aligning theoretical knowledge with practical application, the model demonstrated that education can simultaneously serve as a tool for individual intellectual growth and a mechanism for social change.

5. DISCUSSION

The successful implementation of this research model underscores the transformative potential of hybrid and blended learning approaches in university-level research projects. By integrating digital collaboration, international teamwork, and empirical inquiry, the program not only enhanced student engagement but also contributed meaningfully to the broader discourse on educational inequality. However, the execution of this model was not without its challenges, each of which necessitated adaptive strategies and institutional support. One of the most pressing difficulties was **technological accessibility**. While digital platforms facilitated crossborder collaboration, disparities in internet connectivity and access to research tools created inconsistencies in participation. Students from regions with limited digital infrastructure occasionally faced difficulties engaging in synchronous discussions or uploading large datasets.

Addressing this issue required flexible solutions, including pre-recorded lecture materials, offline research assignments, and alternative communication channels to ensure inclusivity.

Another significant challenge stemmed from **time zone and scheduling conflicts**. Given the international composition of research teams, coordinating live discussions and collaborative activities required meticulous planning. While synchronous interactions were invaluable for fostering real-time engagement, they were not always feasible for all participants. As a result, asynchronous learning opportunities—such as discussion forums, shared research logs, and recorded mentorship sessions—were implemented to maintain continuity in the research process. The model also placed considerable demands on **faculty workload**. Effective mentorship was crucial to guiding students through the complexities of qualitative and quantitative research, yet the time commitment required for individualized feedback, methodological support, and project coordination was substantial. Faculty members had to balance their instructional responsibilities with the logistical challenges of overseeing a largescale, interdisciplinary research initiative. This experience underscores the need for institutional mechanisms that recognize and support faculty involvement in research-integrated teaching.

Despite these challenges, the benefits of this hybrid model far outweighed its limitations. The increased **student engagement**, coupled with the opportunity to contribute to a real-world research agenda, demonstrated the efficacy of experiential learning in higher education. The program fostered critical thinking, methodological rigor, and cross-cultural collaboration—essential competencies for academic and professional success. The lessons learned from this initiative offer valuable insights for future research-based curricula. The integration of hybrid methodologies must be accompanied by robust digital infrastructure, flexible scheduling mechanisms, and institutional support for faculty mentorship. By refining these aspects, universities can further harness the potential of blended learning to create more inclusive, interactive, and impactful research experiences.

6. CONCLUSION

This study has demonstrated that **learning, researching, and publishing do not need to be separate tasks but can be seamlessly integrated into one dynamic, collaborative process** through hybrid and blended methodologies. By combining these approaches, we have **answered the question of what happens when learning, research, and publishing become a unified experience**—it leads to deeper engagement, interdisciplinary collaboration, and the production of valuable, real-world knowledge.

Moreover, we have shown that **students can indeed be empowered to soar—not only in acquiring knowledge but in actively creating, collaborating, and innovating across digital and physical learning spaces**. By shifting from a passive learning model to a research-based, participatory approach, students gain confidence, critical thinking skills, and a sense of ownership over their academic journey.

We have also addressed the question of **what happens when education moves beyond passive absorption**—it transforms into an interactive, research-driven experience where students are not just learners but contributors to the global knowledge base. Our findings highlight how students, through engagement in hybrid and blended methodologies, can transition from knowledge consumers to **active producers, co-creators, and even co-authors of academic publications**.

If knowledge is truly power, we must ask, **why limit students to merely consuming it?** Our research confirms that **hybrid and blended learning can equip students with the tools to actively shape and expand knowledge**, rather than just absorbing pre-existing information. This

shift is fundamental in preparing them for the rapidly changing demands of the academic and professional world.

Finally, our study has answered **how hybrid and blended learning can break down academic silos and create a globally connected, interactive research and teaching experience**. By integrating technology, collaboration, and applied research, we have built a model where learning is not an isolated task but a **holistic and inclusive endeavor** that bridges disciplines, cultures, and methodologies.

Thus, through this innovative approach, we have not only taught but **taught them to fly**—not by dropping the stone of knowledge upon them, but by offering it as a foundation from which they can launch into their academic and professional futures.

By enabling students to participate actively in real-world research, this approach enhances academic skill development and provides valuable professional experience.

Table 5. Comparison in between **Traditional Research Learning** and **Hybrid/Blended Research Learning**

Aspect	**Traditional Research Learning**	**Hybrid/Blended Research Learning**
Learning Format	Primarily in-person, classroombased	Combination of online and in-person learning
Collaboration	Mostly local, limited international exposure	Global collaboration with researchers worldwide
Flexibility	Fixed schedules, synchronous participation	Flexible scheduling with asynchronous options
Technology Use	Limited to library resources and basic tools	Advanced digital platforms for research & data
Aspect	**Traditional Research Learning**	**Hybrid/Blended Research Learning**
Data Collection	Local fieldwork, in-person interviews	Remote data collection, digital surveys, AI tools
Interdisciplinary Approach	Focus on single-discipline methodologies	Integration of multiple disciplines & perspectives
Faculty Involvement	One-on-one mentoring with limited scalability	Scalable mentoring with digital communication tools
Student Autonomy	Instructor-led, structured approach	Student-led initiatives with guidance and peer feedback
Research Dissemination	Local/national publication, conferences	Global online publication and international conferences
Skill Development	Emphasis on traditional research skills	Additional digital literacy and crosscultural competencies
Accessibility	Limited by geographic constraints	Open to diverse, international participants

This chart-table illustrates how hybrid/blended research learning expands opportunities for **international engagement, digital skill acquisition, and research accessibility**, while also addressing the challenges of **traditional research constraints**. Let me mention here that at the end of the process, we also ended the semester with the international conference analysed in the third column "Hybrid/Blended Research Learning" of Table 5. This large-scale on-line event was

a tremendous experience for all the students involved, a typical example of the reward for the work itself being the "crowning" of the work with a serious and meaningful final assignment. Universities can adopt and adapt this complex model to various disciplines, leveraging digital tools and flexible learning structures to promote student engagement and interdisciplinary collaboration. Future research should explore further refinements to overcome technological and logistical challenges while expanding the application of this methodology to different educational contexts.

ACKNOWLEDGEMENTS

The author extends heartfelt gratitude to all participants and dedicated contributors whose enthusiasm and commitment made this research possible. Special thanks to Abdukarimov Khasan, Bartha Adrienn, Kateryna Bender, Uliana Burshtyk, Cabral de Noronha e Menezes Furtado António Maria, Elena Crisan, Dávid-Kacsó, Ágnes, Youssef El Gamal Walid Fawzy, Joana Fernandes, Ferreira Maia da Cunha Praca Afonso Manuel, Héderné Berta Edina, Hernández Solis Grecia Gisselle, Kamilla Kovacs, Landeiro Cabanas Marta Isabel, Lőrinczné Bencze Edit, Malatyinszki Szilárd, Munkácsy Kati, Kristina Oros, Yelyzaveta Povoroznyk, Ioana Orzea, Öztürk Gülsah, Ribeiro Benigno Catarina, Ritók L. Nóra, Tetiana Romaniuk, Mária Roth, Raiu Sergiu, Alexis Sorel, Török László Máté, Sebastian Trofin, Merel Vrancken, Olena Zaiats, Aruna Zhetpisbay,

Further appreciation goes to the Oltalom Foundation, Péter Tibor Nagy, and Zsuzsanna Hanna Bíró, as well as the Hungarian Pedagogical Association, with special acknowledgment to László Trencsényi, whose support and collaboration were invaluable to this work.

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