Journal of
Problem Based Learning
in Higher Education

VOL 13 • 1

Vol 13, No. 1, 2025 – Page 25-48
doi.org/10.54337/ojs.jpblhe.v13i1.9971

Problem- and Project-Based Learning in Diverse Settings

Reflections on 23 Years of Application

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Abstract

This article presents an autoethnographic account of 23 years of teaching experience using problem- and project-based learning (ProbBL and ProjBL) in higher education, across face-to-face, blended, distance learning, and massive open online course (MOOC) formats. Drawing on 20 peer-reviewed journal articles and personal teaching notes, I systematically analyse how PBL approaches were developed, adapted, and implemented in diverse institutional and cultural contexts. These published works, based on both quantitative and qualitative research, serve as reflective artifacts through which I revisit and reinterpret my teaching practice. Using content mapping and thematic coding, I identify recurring tensions and enabling conditions in the application of PBL over time. Key findings highlight the importance of institutional support, student autonomy, emotional engagement, and community partnerships in sustaining active learning practices. Conversely, structural challenges such as

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Received 28 January 2025 | Accepted 25 August 2025 | Available online in Early View 11 September 2025 | Published 16 December 2025.

faculty precarity, bureaucratic rigidity, and cultural resistance to pedagogical change often undermine these efforts. This article contributes to the literature by foregrounding the often-invisible institutional and emotional labor involved in sustaining transformative teaching practices. It also offers practical recommendations for educators and academic leaders seeking to advance PBL in complex and evolving educational environments.

Keywords: Autoethnography; project-based learning; MOOCs; institutional culture; reflective practice

Introduction

Over the past 23 years, I have implemented problem- and project-based learning (ProbBL and ProjBL) across a wide range of higher education contexts, including MBA programs, undergraduate and graduate courses, interdisciplinary initiatives, and massive open online courses (MOOCs). These experiences took place in diverse instructional formats—face-to-face, blended, distance, multi-campus and MOOCs—and within contrasting institutional cultures, ranging from private business schools to public universities.

In this article, I adopt an analytic autoethnographic approach (Ellis, Adams, & Bochner, 2011; Adams et al., 2015) to examine how these teaching experiences were shaped by, and in turn shaped, broader institutional and cultural dynamics. My goal is not only to reflect on pedagogical strategies and outcomes, but to investigate the conditions under which active learning pedagogies succeed or fail—including the effects of institutional structures, job precarity, student profiles, and educational modalities.

The analysis is grounded in a set of 20 peer-reviewed journal articles authored or co-authored by me, along with personal teaching notes. These materials serve as reflective artifacts, documenting both the implementation of PBL and the challenges encountered in different educational environments. Rather than offering a chronological summary of past work, I engage in a critical and thematic re-reading of these experiences, identifying patterns and tensions that reveal how educational innovation intersects with institutional constraints and sociocultural contexts.

This study seeks to answer the following guiding questions:

- What institutional and cultural dynamics support or hinder the use of ProbBL and ProjBL in higher education?
- How do conditions such as job stability, student autonomy, or community engagement shape the outcomes of these pedagogies?

- What broader lessons about teaching, learning, and innovation emerge when reflecting on two decades of practice?

By addressing these questions, I aim to contribute to ongoing scholarly discussions on the transformative potential of active learning, the invisible labor involved in sustaining it, and the structural barriers that educators often face. This article may be of interest to scholars, teachers, and academic leaders committed to advancing meaningful, context-aware pedagogy in higher education.

Structure of the article

This article is structured around six key teaching experiences drawn from a 23-year trajectory of applying problem- and project-based learning (ProbBL and ProjBL) in higher education. These six experiences were selected not simply for their chronological order, but for their analytical richness—they represent moments when pedagogical innovation intersected with specific institutional, cultural, and structural challenges. Each section draws on peer-reviewed publications and teaching notes that document the experience, while also serving as reflective artifacts for critical reinterpretation. Rather than offering isolated case studies, the article engages each teaching context as a lens through which to analyze recurring tensions: faculty precarity, bureaucratic resistance, emotional labor, community engagement, and student autonomy. This layered structure allows the article to trace patterns across time, connect personal experience with systemic realities, and contribute to broader debates about active learning, institutional change, and the sustainability of transformative teaching practices in higher education.

Theoretical review

Project-based learning (hereafter referred to as ProjBL) is a student-centered, inquiry-driven teaching strategy (Larmer, Mergendoller, & Boss, 2015). Students work collaboratively in teams on long-term projects designed to address real-life challenges. This approach emphasizes learning by doing, fostering collaboration and critical thinking. It often incorporates multidisciplinary learning, with courses structured around a central project that includes clearly defined deliverables and milestones.

Academic literature widely agrees that this learning-by-doing approach offers significant benefits (Zhang & Ma, 2023). It is well established that students learn more effectively when they apply theory in practice, work collaboratively in

teams, and share knowledge and expertise (Kumi-Yeboah & James, 2024). Additionally, this approach helps students develop various essential skills, such as communication, project management, and critical thinking (Moustafa & Al-Rashaida, 2024). Researchers emphasize the advantages of engaging students in real-life projects (Romão et al., 2024), particularly in contributing to solutions for community challenges (Rooks & Dorsey Holliman, 2018). Contributing to social projects can be highly motivating, inspiring students to give their best effort to the task (Jacoby, 2014).

Problem-based learning (hereafter referred to as ProbBL) shares similar characteristics with ProjBL; however, its focus is on solving real-world problems. The scope is generally narrower, with the outcome being either a solution or a deeper understanding of a specific problem. Like ProjBL, it is inquiry-driven; however, its emphasis lies more on critical thinking than on creating a tangible product (Bender, 2012). ProbBL involves presenting students with ill-defined problems—challenges that can have multiple solutions—thereby fostering creativity and enhancing problem-solving skills (Dias & Brantley-Dias, 2017).

However, we also recognize that both ProBL and ProjBL come with challenges. The teacher's workload can be significantly higher compared to a traditional teacher-centered course (Warr & West, 2020). Additionally, course management can be more time-intensive, and the outcomes may be unpredictable (Summami, 2015). Furthermore, managing multiple projects and problems across various student teams can pose challenges. Students may experience stress and face conflicts within their teams (Lee et al., 2015).

In this article, I reflect on six different experiences of applying problem- and project-based learning in higher education:

1. Using ProjBL in face-to-face MBA courses,
2. Using ProjBL in undergraduate courses at the Federal University of São Paulo, Osasco Campus,
3. Using ProjBL in pilot courses at the Federal University of São Paulo, Osasco Campus,
4. Using ProjBL in graduate courses at the Faculty of Education, University of São Paulo,
5. Using ProjBL in blended courses at the Rectorate Campus, Program of Technology and Educational Design, and
6. Using project and problem-based learning in MOOCs.

In the courses I teach, I consistently implement Kolb's experiential learning cycle (Kolb, 2014) as a framework for continuous pedagogical improvement. Kolb's model is built on four stages—concrete experience, reflective

observation, abstract conceptualization, and active experimentation—which form a dynamic and iterative process of learning. I apply this cycle by carefully planning each course (abstract conceptualization), delivering it while encouraging hands-on engagement (concrete experience), gathering student feedback at both the midpoint and the conclusion (reflective observation), and using this data to make evidence-based adjustments for future offerings (active experimentation). This process not only helps refine my teaching strategies but also promotes a learner-centered environment. For each of these course iterations, I reference peer-reviewed articles I have authored, which document these applications in greater depth, enabling interested readers to explore the practices and results in more detail.

The context

Using ProjBL in face-to-face MBA Courses

From 2001 to 2014, I taught a course titled *Project Simulation* to MBA students at the Polytechnic School of Engineering at the University of São Paulo. This program is fee-based, with the majority of students covering the cost themselves, while a few were sponsored by their employers.

The course was conducted in a traditional face-to-face format, and most students were seasoned professionals with at least five years of work experience. *Project Simulation* served as the capstone course of a two-year Project Management MBA program. In prior courses, students learned the theoretical aspects of planning, executing, and controlling projects, following the guidelines set by the PMI (Project Management Institute, 2021). The goal of the final course was to give students the opportunity to apply this knowledge in practice by collaborating on real-life projects in teams.

As the instructor, my objective extended beyond teaching project management. I aimed to broaden students' perspectives, encouraging them to become more socially conscious and aware citizens by exposing them to issues they may not have previously encountered, such as collaborating with institutions that provide assistance to people in need.

Over the years, I built a robust network of community partners (Arantes do Amaral & Matsusaki, 2016). Initially, this involved visiting community centers and inviting organizations to collaborate with the university. As the impact of our projects became evident, word-of-mouth led more institutions to seek our assistance, further expanding the network.

The majority of these organizations were NGOs that served underprivileged communities, including orphanages, elderly homes, shelters for homeless individuals, and centers for children with cancer or those who had suffered abuse. We also partnered with K-12 public schools, hospitals, and municipal institutions that supported people with mental disabilities.

All these institutions shared a common need: support to improve their ongoing efforts. Some required medicines, others needed food and clothing, while some sought appliances and furniture. Others required software systems or upgrades to their facilities. I referred to these needs as "project themes."

The students, working in teams, were tasked with designing and developing a project that addressed the specific needs of a community partner, putting project management theory into practice. On average, each class consisted of 30 students divided into six groups of five members each. For each course, we created a virtual learning environment (Arantes do Amaral & Gonçalves, 2015), which included a website featuring video lectures, readings, the course syllabus, and a master project schedule.

From 2002 to 2014, this course was offered 47 times. Over that period, 1,400 students successfully completed 204 projects on behalf of 34 institutions. Most projects involved fundraising, prompting students to develop creative strategies, such as organizing raffles, soliciting donations from private corporations, hosting fundraising events, leveraging social networks for donations, and even initiating crowdfunding campaigns (Arantes do Amaral et al., 2016).

Students had voice and choice: they selected the community partner, the project theme, and their teammates. They also defined team roles and responsibilities. However, they were required to adhere to a master schedule I provided, which included clearly defined deadlines and deliverables. Each week, students submitted deliverables such as planning documents (e.g., work breakdown structures), prototypes, or project status presentations. Additionally, they documented their weekly progress on a project website, reflecting on the work completed, challenges faced, and solutions implemented. This practice encouraged deep reflection on their learning process.

Students were also encouraged to follow the progress of other teams' projects by visiting their websites, enabling cross-team learning from both successes and setbacks. Throughout the course, we held multiple project walkthroughs, where each team presented their progress to others, receiving peer suggestions and feedback from me. The students' efforts resulted in the creation of complex products and services, including building restorations, goods acquisition,

software development, and the provision of essential items such as food and medicines.

Some projects gained national recognition and were featured in newspaper articles (Dimenstein, 2007, 2008a, 2008b, 2008c, 2009a, 2009b) radio programs and a documentary (Engels, 2013). During my time at the University of São Paulo, I received strong support from MBA program coordinators, who recognized the value of my approach. They saw that the projects not only benefited students and community partners but also enhanced the MBA program's reputation. Word-of-mouth recommendations from alumni and community partners, along with occasional media coverage, helped attract more students.

During this period, I developed and refined a course methodology (Arantes do Amaral, 2018). On the first day of the course, representatives from community partner organizations introduced the project themes to the students, offering a glimpse into diverse social realities and pressing challenges. These presentations played a pivotal role in igniting the students' motivation, inspiring them to fully engage with their projects. Many students were deeply moved as they learned about the impactful and meaningful work the community partners were doing to support people in need, creating a strong emotional connection to the projects.

Over the next two weeks, students formed teams, engaged with community partner representatives, visited their facilities, and interacted with the beneficiaries to fully understand the project requirements. Subsequently, students devised fundraising strategies and created project management plans. They executed these plans in the following weeks, culminating in a final presentation of their achievements to community partners and other stakeholders, such as city council representatives, community members, MBA coordinators, and faculty. These presentations were both an opportunity for feedback and a celebration of their accomplishments.

The MBA program fostered a modern, competitive culture. Courses were student-centered, aligned with contemporary project management methodologies, and encouraged the use of active learning methods. Mid-course and end-of-course evaluations by students provided valuable feedback, enabling continuous improvement.

The program also benefited from its location in a safe neighborhood with accessible public transportation, including nearby bus and subway stations, which facilitated participation for both students and community partners. The modern classrooms, equipped with proper heat and noise insulation, created an optimal learning environment.

However, my position as a professor was unstable. I was hired as an independent consultant, teaching courses on a contract basis. There were no opportunities for professional growth or engagement in research activities, outreach projects, or international collaborations. After many years in this role, I aspired to apply what I had learned in a broader context. I sought a stable position at a public university, where I could teach more students, develop outreach programs, enhance my teaching skills, and establish international partnerships.

In 2014, I participated in a competitive selection process for a faculty position teaching *Project Elaboration and Management* at the Federal University of São Paulo, Osasco campus (Unifesp Osasco). I secured first place in the selection process. Since 2014, I have been working as a professor at Unifesp.

Using ProjBL in undergraduate courses at the Federal University of São Paulo, Osasco Campus

The *Project Elaboration and Management* course shared similarities with the course I taught in the MBA program. This twelve-week course aimed to introduce students to the fundamental concepts of project management while challenging them to apply these concepts in real-life projects. However, the student profile was notably different: instead of professionals with years of work experience, these were young undergraduate students, most of whom had no work experience or prior knowledge of project management. They came from the fields of Economics, Accounting Sciences, and International Relations. Regarding the classroom environment, several issues stood out. The classrooms lacked adequate heat and noise insulation, making the environment uncomfortably hot in the summer, cold in the winter, and noisy year-round. Additionally, there was inadequate public transportation nearby, and the campus was in a high-crime neighbourhood. These challenges negatively impacted both student attendance and the participation of community partners in classroom activities.

I decided to adapt and use the same methodology I developed for the MBA courses. Students were tasked with learning project management theory and applying it to projects developed for the same network of community partners established over previous years. To support the course, I also authored a book (Arantes do Amaral, 2020), comprising 12 chapters, each corresponding to the content of one week of the course.

Given the students' lack of experience, the project themes proposed by the community partners were less complex than those designed for MBA students. Nonetheless, the students achieved remarkable results. Their projects included

creating small community libraries, acquiring essential food kits and clothing, and designing and providing crutches for hospitals.

The course was held 34 times, and a total of 199 projects were completed. Some of these projects even gained media attention and were featured in newspaper articles (Correio Paulista, 2019).

The culture of the Unifesp Osasco programs was quite different from that of the MBA program. Unlike the MBA program, the undergraduate courses were entirely free of charge. Additionally, professors, after a three-year tenure track, acquired job stability. They were not paid per course but received a fixed salary and were required to teach a minimum of 120 hours per semester (equivalent to two sixty-hour courses per semester). Professors were also encouraged to engage in outreach activities and research.

However, I observed some limitations within the institution. The teaching culture appeared more traditional, relying heavily on teacher-centered methodologies with fewer opportunities for student-centered learning. In my view, there were opportunities to better integrate rapid innovations in education and establish formal mechanisms for incorporating student feedback into course evaluations. Additionally, there was no structured program for continuous improvement to enhance course quality.

The administrative processes also presented challenges. They were relatively complex and often delayed the implementation of updates to course content and offerings. Practical issues such as inadequate classroom facilities, inefficiencies in inter-departmental coordination, enrolment barriers, and administrative workloads occasionally hindered course quality. These challenges highlighted areas for potential development and improvement (Arantes do Amaral, 2020).

Nevertheless, working at a public university provided me with the opportunity to create pilot courses and explore the use of ProjBL and ProbBL in different contexts, expanding its application and impact.

Using ProjBL in pilot courses at the Federal University of São Paulo, Osasco Campus

In 2015, I launched the *Project Elaboration and Management* course as the institution's first multi-campus pilot program. The course was elective, offered without academic credits, and participation was not mandatory for students.

The course was delivered in a blended format, with a few face-to-face meetings and several online activities. It involved 70 undergraduate students from three

different campuses of Unifesp, located in various cities. The students developed projects for 14 NGOs, making extensive use of information technology tools. Participants expressed that developing projects for community partners was highly motivating. However, the pilot project revealed several challenges, such as scheduling conflicts, distances between campuses, and high dropout rates—factors that negatively impacted the course (Arantes do Amaral et al., 2018). I speculate that the dropouts were due to the course being non-credit and elective. Some students informed us that, while they enjoyed the course, they dropped out to focus on mandatory courses.

In November 2015, I offered another pilot course, *Laboratory of Social Projects*, as an outreach initiative involving both community members and university students. This course was free of charge. The 72 participants learned project management principles and applied them to 13 projects on behalf of eight community partners. The course enabled intense knowledge-sharing among participants. However, it also faced high dropout rates, scheduling conflicts, and a lack of participant commitment (Arantes do Amaral, 2017). The workload required to design and deliver this course was substantial. I believe that the dropouts were partly influenced by the university's location, which lacked sufficient public transportation, and by the fact that the course was offered free of charge, as this can sometimes lead to lower levels of commitment from participants (Celik & Çağıltay, 2024).

In 2021, during the COVID-19 pandemic, I had to transition my undergraduate courses from face-to-face to entirely online formats. Moreover, I could not propose activities involving visits to community partner facilities to avoid the risk of contagion. Compounding this, community partners were under considerable stress due to the pandemic and could not participate. Therefore, I offered the undergraduate course *Project Elaboration and Management* to students in the Economics Department using a different approach: a Data Science Olympics competition. I chose this format because these students had already studied several data science concepts in previous courses. A Data Science Olympics would help them review these concepts in a practical, team-based project.

The students' preparation for the competition followed a combination of problem and project-based learning approaches, with problems to solve and clearly defined deliverables and milestones. Although designing and delivering this course required significant effort, the results were remarkable. Every team was highly motivated to win the competition. In the process, they developed both project management and data science skills. However, they also encountered challenges, including team member dropouts, lack of commitment

from a few participants, and difficulties scheduling online meetings (Arantes do Amaral et al., 2023).

Using ProjBL in graduate courses at the Faculty of Education, University of São Paulo

From 2017 to 2023, I volunteered as an affiliate professor (i.e., without receiving any salary or grant) in the graduate program of the Faculty of Education at the University of São Paulo (FEUSP). Contributing to this graduate program was particularly appealing to me because it offered resources that Unifesp Osasco lacked, such as smart classrooms. Additionally, I was excited by the opportunity to teach K-12 schoolteachers from São Paulo, as this would help promote the use of ProjBL in various schools.

My goal was to teach graduate students the concepts of Project-Based Learning (ProjBL) and Systems Thinking, combining the ProjBL approach with other active learning methodologies, such as flipped classrooms, problem-based learning, and simulation-based learning.

In 2018, I offered the course *Project-Based Learning* to 33 graduate students. This was a highly engaging experience, as I employed a ProjBL approach to teach ProjBL: the students worked in teams, with each team tasked with creating a book chapter describing the implementation of ProjBL in different Brazilian schools. To accomplish this, the students visited schools in São Paulo that used ProjBL in their courses, conducted interviews with teachers and students, and documented their findings. The final product was a book compiling all the experiences (Arantes do Amaral, Araújo, & Hess, 2018). This course provided students with a comprehensive immersion in ProjBL, connecting theory with practice and encouraging reflective learning (Arantes do Amaral, 2021).

In 2019, I explored the combination of problem-based learning and simulation-based learning in a Systems Thinking course offered to 11 graduate students in a face-to-face format. The students worked in teams and made extensive use of simulation software in a technology-enhanced environment (smart classroom). The course fostered group modelling activities, which facilitated intensive knowledge sharing (Arantes do Amaral & Fregni, 2021b).

During the first semester of 2020, as the COVID-19 pandemic began, I delivered an online *Project-Based Learning* course to 20 graduate students. The course focused on exploring neuroscience concepts that could enhance the effectiveness of ProjBL-centered courses. Students worked in project teams to create short videos demonstrating potential applications of neuroscience in various educational settings. The course enabled long-lasting learning by

linking theory with practice, encouraging knowledge sharing, and supporting the retrieval of previously learned content (Arantes do Amaral & Fregni, 2021a). In the second semester of 2020, still under the constraints of the COVID-19 pandemic, I delivered another online course, *Systems Thinking*, to 20 graduate students at FEUSP. This course combined ProjBL and the flipped classroom approaches to promote long-lasting learning. Students were tasked with reading materials prior to class, participating in synchronous online activities to reinforce their understanding, and working in teams to develop projects. These projects culminated in brief videos analyzing the dynamics of real-world systems. From this course, I learned that integrating critical thinking, ProjBL, and the flipped classroom approaches significantly enriches the learning experience (Arantes do Amaral & Fregni, 2021c).

Using ProjBL in the Technology in Educational Design program

In the first semester of 2022, I requested a transfer to the Unifesp Rectorate Campus to teach courses in the Technology in Educational Design program. This program is the only one at Unifesp that offers online courses. It is a two-year program structured around a ProjBL approach. Each semester includes several short courses and *Integration Projects*, designed to give students the opportunity to apply what they learn in the short courses to practical scenarios.

To ensure alignment between the content of the short courses and the *Integration Projects*, we hold several collaborative meetings involving all professors. This planning process is both time-consuming and complex.

There are four types of *Integration Projects*: the first focuses on open educational contexts, the second on formal educational contexts, the third on non-formal educational contexts, and the fourth on corporate educational settings.

During the first semester of 2023, I collaborated with another professor to lead the *Integration Project on formal educational context*. The course followed a ProjBL approach, with students working in teams to create educational artifacts for a K-12 public school. The students adhered to the Design Thinking process throughout the project. We observed that integrating Design Thinking with project-based learning significantly motivated students, enhanced their problem-solving and project management skills, and fostered interdisciplinary learning (Arantes do Amaral & Gamez, 2023). Additionally, working on real-life projects with a public school increased their determination to learn.

Using ProjBL and ProBL in MOOCs

In addition to teaching regular courses, I have also offered massive open free-of-charge online courses (MOOCs) as part of outreach initiatives. My goal has

been to provide educational opportunities to people from across the country. From 2022 to 2024, I delivered five MOOCs—Data Science, R Programming Language, Scratch Programming Language, Visual Thinking, and Systems Thinking—to a total of 2,145 students from all states in Brazil.

In these courses, students worked on individual projects, creating artifacts related to the course subjects. I employed a combination of problem-based learning and project-based learning: students learned by doing, solving problems, and working on individual projects (Arantes do Amaral, 2025).

To deliver these courses, I utilized free tools such as Google Sites, Loom, Google Groups, Adobe Sketchbook, YouTube, and Facebook, along with paid artificial intelligence tools like ChatGPT, DALL-E, and ZeroGPT. Offering these courses has been challenging, as it involves not only interacting with hundreds of students but also the significant task of creating the virtual learning environment and managing the bureaucratic processes required for course approval by the University Outreach Committee.

Methodology

The core data set consists of 20 peer-reviewed journal articles, authored or co-authored by me between 2000 and 2023. These articles were chosen because they reflect six distinct phases of my professional practice, each marked by a different teaching context (e.g., business school, interdisciplinary program, MOOC, blended graduate course, etc.). These six experiences were selected not for chronological completeness, but for their analytical richness: each presents a unique set of cultural tensions, institutional constraints, and pedagogical adaptations that allow for deep reflection on the implementation and evolution of PBL.

Each of the 20 articles is based on empirical research, involving either quantitative, qualitative, or mixed-method designs. Some include surveys, statistical analyses, and formal assessments of learning outcomes, while others present qualitative data from interviews, project evaluations, or document analysis. Several also feature systemic analyses of the educational environments in which they were conducted—mapping interrelated factors such as institutional policies, student demographics, faculty working conditions, and technological affordances. To avoid a simple summary of past work, I approached these articles as reflective artifacts—not only as products of previous research, but as a structured window into my own pedagogical development. I engaged in a multi-step analytical process:

Selection: I identified six key experiences that exemplified different challenges, formats, and institutional cultures relevant to PBL.

Mapping: I created a timeline and matrix cross-referencing articles by context, format, student profile, pedagogical approach, and institutional support.

Thematic Coding: I conducted inductive coding to identify recurring tensions and themes, such as job insecurity, community engagement, institutional resistance, emotional labor, and student autonomy.

Synthesis and Interpretation: I analyzed how these themes emerged across cases and reflected on how my evolving responses were shaped by broader cultural and institutional forces.

This interpretive process allowed me to re-experience and critically reinterpret my own teaching—not to celebrate it, but to examine how pedagogical agency is constrained or enabled by structures of power, resource distribution, academic culture, and labor conditions. Rather than reproducing what is already published, this article seeks to offer new meaning by repositioning those experiences within an autoethnographic framework that foregrounds reflection, critique, and cultural insight.

By treating published studies as both data and documentation of lived professional life, this approach brings transparency and scholarly rigor to the autoethnographic narrative. It also contributes to current debates in the PBL literature by surfacing invisible academic labor, institutional contradictions, and the emotional demands of innovation in contexts that are often resistant to change.

Findings

Table 1 presents the key findings on the use of ProjBL and ProbBL in various educational settings.

ProjBL and ProBL contexts	Findings
MBA courses (face-to-face)	• The creation of a network of community partners was a lengthy and complex process. • Project themes addressing challenges faced by disadvantaged groups sparked students' motivation to complete their projects. • Continuous improvement efforts led to the development of a robust project-based learning method. • The modern MBA program culture encouraged professors to promote real-world projects and allowed quick course adjustments. • Student evaluations contributed significantly to improving the quality of the courses offered. • Well-designed classroom environments facilitated teamwork activities. • Proximity to transportation networks (e.g., subway and bus lines) made it easier for students from community partners to participate in activities. • The student cohort consisted of young professionals with at least five years of work experience. • The course could only be offered in face-to-face settings. • I faced limited professional growth opportunities due to precarious, short-term, per-course contracts.
Undergraduate (face-to-face courses)	• An established community partner network and a mature course methodology significantly facilitated the courses development. • Although less complex, project themes addressing issues faced by disadvantaged groups effectively motivated students to complete their projects. • A bureaucratic organizational culture and slow decision-making processes delayed course adjustments. • Various challenges affected course quality, ranging from inadequate classroom environments to academic rivalries between professors and departments. • Opportunities existed to offer pilot courses in diverse academic settings.
Pilot-courses (multi campi blended courses, outreach courses	• There were many challenges involved in providing blended multi-campus courses, such as the distances between campuses, which make face-to-face meetings difficult, high dropout rates, and schedule conflicts.

and distance learning courses)	• Outreach courses allow intense knowledge sharing between participants; however, there are several challenges, such as high dropout rates, schedule conflicts, lack of commitment, and high teacher workloads. • The distance learning course, centered on ProjBL and aligned with the students' field of expertise and previous courses, worked very well even without the participation of community partners. However, students faced challenges such as team member dropouts and communication issues. The COVID-19 pandemic further added stress to the course.
Graduate courses (face-to-face and distance learning courses)	• The integration of Problem and Project-Based Learning (ProjBL) approaches with flipped classroom and simulation-based learning proved highly effective. • Incorporating neuroscience principles into ProjBL centred courses significantly enhanced long-term retention and learning outcomes. • Utilizing a ProjBL-centered course to teach Project-Based Learning encouraged profound reflection on the underlying theory.
Interdisciplinary Project-based learning courses (blended courses, involving several teachers)	• The planning and delivering process involve a complex joint planning and management • There are challenges in managing the participation of external organizations such as companies, non-formal education institutions and schools.
Massive Online Courses	• Delivering free MOOCs is an incredibly enriching educational experience. The combination of problem-based learning and project-based learning provides learning opportunities to thousands of students. • The process of designing and delivering these courses involves a significant workload and relies heavily on free tools as well as paid AI tools.

Table 1. Key findings.

Discussion

The findings below emerge from a critical reinterpretation of 23 years of applying problem- and project-based learning (ProbBL and ProjBL) across diverse contexts. These reflections are now reorganized to respond directly and sequentially to the three guiding research questions.

Research Question 1: What institutional and cultural dynamics support or hinder the use of ProbBL and ProjBL in higher education?

- On Problem and Project-Based Learning

ProbBL and ProjBL can be successfully implemented in a wide range of settings—including face-to-face, distance, blended, multi-campus, and massive formats. However, their success depends heavily on institutional support, leadership culture, and faculty autonomy. These findings align with studies that demonstrate the adaptability of project-based learning in diverse contexts (Malyuga & Petrosyan, 2022; Yeh, 2010; Hilger et al., 2007; Verstegen et al., 2023).

- Navigating Institutional Culture

Different institutional cultures either support or hinder innovation. Organizational norms can either enable or constrain faculty agency. These dynamics significantly affect the sustainability of ProbBL and ProjBL initiatives, echoing Camacho et al. (2018). This also addresses the broader question of how to uphold transformative pedagogies in environments that lack structural or material conditions for their success.

- Surfacing Hidden Labor

The invisible work behind ProbBL and ProjBL —including emotional labor, administrative overload, and negotiation of bureaucratic systems—often goes unrecognized. These barriers complicate the sustainability of active learning practices despite their pedagogical benefits. This tension is central to sustaining pedagogical innovation in institutions that may not culturally or materially support them.

Research Question 2: How do conditions such as job stability, student autonomy, or community engagement shape the outcomes of these pedagogies?

- Designing Meaningful Projects for Students

Student autonomy and emotional engagement are vital to the success of ProjBL. Projects that are personally and socially meaningful foster intrinsic motivation, collaboration, and knowledge-sharing (Harun et al., 2012). This reflects the conditions that truly support student motivation and autonomy in non-compulsory settings.

- Breaking Down University Walls

Community engagement enhances student learning and provides mutual benefits for external partners. These partnerships demonstrate how outreach supports pedagogical depth and relevance. Langhout et al. (2002) also highlight the importance of such collaborations. This analysis underscores the value of civic engagement within dominant academic cultures.

- The Importance of Boldness and Experimentation

Sustaining ProbBL and ProjBL in precarious environments demands emotional resilience and a willingness to take risks. Educators often operate beyond their comfort zones and must be prepared to challenge institutional norms. Hung et al. (2019) emphasize that bold experimentation is essential for pedagogical innovation. This connects with questions around how job stability—or lack thereof—shapes the identity and agency of innovative educators.

Research Question 3: What broader lessons about teaching, learning, and innovation emerge when reflecting on two decades of practice?

- The Importance of Continuous Improvement

Teaching is an iterative design process that benefits from cycles of reflection, feedback, and refinement. Continuous improvement enhances the learning experience and aligns with the reflective teaching model advocated by Alves et al. (2017).

- Publishing and Sharing Findings

Disseminating reflections through academic publication enables critical engagement with one's own teaching and contributes to the broader field. Review processes also offer valuable feedback that strengthens both practice and research (Bloom, 1999).

- Improving Teaching Skills

Effective ProbBL and ProjBL teaching develops over time through experimentation, failure, and growth. Educators must commit to long-term development and view teaching as a lifelong learning process. Boss and Larmer (2018) underscore the need for sustained investment in pedagogical expertise.

These findings collectively underscore that ProbBL and ProjBL is not a universally applicable method, but rather a culturally embedded and structurally contingent practice. Its success hinges not only on design but also on alignment with institutional values, labor conditions, and emotional realities.

Conclusion

This article argues that the long-term sustainability and transformative potential of problem- and project-based learning (ProbBL and ProjBL) depend less on the techniques themselves and more on the cultural, structural, and emotional contexts in which they are enacted. Through the lens of analytic autoethnography, I have shown how ProbBL and ProjBL are continuously negotiated within institutional constraints—including precarious labor conditions, bureaucratic rigidity, limited resources, and academic norms that often undervalue innovation and community engagement. These insights echo those of Camacho et al. (2018), who emphasize the cultural barriers educators face in promoting active learning, and Hung et al. (2019), who underscore the institutional inertia that often resists pedagogical change.

The core contribution of this study lies in making visible the invisible: the behind-the-scenes labour, emotional intensity, and cultural negotiations required to uphold active learning in complex educational environments. Rather than proposing a new model or framework, this article offers a critical lens to understand what it takes—emotionally, politically, and structurally—to sustain PBL over time, in line with the calls of Boss and Larmer (2018) for long-term commitment to teacher development, and Langhout et al. (2002), who advocate for integrating civic engagement into higher education.

For educators, the findings suggest that meaningful innovation often requires informal alliances, strategic risk-taking, and emotional resilience. For administrators, the study highlights the need to create material and symbolic conditions—such as job stability, interdisciplinary space, and recognition of teaching labour—that genuinely support active learning cultures.

Ultimately, this reflection contributes to the PBL literature not as a recipe for replication, but as an invitation to critical inquiry. It invites educators and researchers to view pedagogy not just as classroom technique, but as a site of cultural resistance and institutional possibility—a space where values, politics, and identities are constantly at play.

Acknowledgements

I would like to express my heartfelt gratitude to the late Professor Nilton Nunes Toledo for providing me with the opportunity to teach and for his unwavering support during my years as a professor in the MBA program at the University of São Paulo. His guidance and encouragement were invaluable to my professional development, and his legacy continues to inspire me. This acknowledgment is a posthumous tribute to his profound impact on my life and career.

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