



Problem-based learning in a flipped classroom: a case study for active learning in legal education in international law

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ABSTRACT

Higher education in law should develop students' skills such as working collaboratively, communicating, and influencing others through critical legal reasoning. Traditional legal education is partially based on active learning methods, but problem-based learning (PBL) is still relatively rare, with a comparatively smaller number of field applications reported in available literature, and no reports of its use of in legal education in Portugal. This paper describes the application of the problem-based learning method to an Erasmus class of International Public Law in a Portuguese university, during an academic semester. The method was applied to half of the classes, with the remaining half being taught using traditional methods. Students' perceptions and preferences for the different methods were assessed through surveys. In general, our results offer novel insights into the effectiveness of PBL, suggesting that student perceptions of the PBL method depend on their social skills, previous knowledge of the topics, and personal preference. Considering experiences from previous years, the teacher's assessment is that using PBL methods allowed for feedback and closer follow-up on the students' progress and created the opportunity for the development of relevant skills, which would otherwise be excluded from the classroom. These results, as well as limitations, are discussed.

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1. Introduction

1.1. Active learning and problem-based learning in higher education

As higher education expands its training base, the number and diversity of students have increased. Moreover, higher education is nowadays expected to develop students' skills that are transferable to a workplace context. As such, new challenges have emerged for teaching and learning, and public policies on education have steadily

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shifted their focus towards student-centred learning. In this context, active methods have gained prominence – problem-based learning (PBL) is one of the methods that may deliver this transformation.

PBL is a student-centred active learning method in which students work in groups, solving complex problems autonomously, deciding which information is relevant, and which skills are needed, without a predetermined right answer.¹ This method has been used as a way of constructing and teaching courses using problems as the stimulus and focus of student activity.² Starting in the medical sciences, this educational strategy has been applied in several curriculum areas,³ such as in engineering, sciences, and architecture – in short, it is widely applicable in many fields, becoming widely used in higher education.⁴ It is a powerful teaching technique that appeals to students and educators alike, guiding learners through deep learning rather than just being passive. PBL enhances students' learning outcomes by promoting their abilities and skills in applying knowledge, solving problems, practising higher-order thinking, and self-directing their own learning.⁵ Also, specific applications of PBL theories include connecting new information with prior knowledge and schemas, elaboration and construction of knowledge based on learned information, collaborative learning, and social negotiation. In fact, in the process of solving a problem, students are not only acquiring the domain knowledge, but also constructing appropriate knowledge schemata and contextualising learned information. This means that they will be able to assess their own level of knowledge on a given subject, develop a strategy for addressing problems, generate and share ideas.⁶ In PBL, the tasks of solving authentic problems help students establish situational knowledge for not only structuring but also indexing their domain content knowledge.

According to Kretchmar,⁷ PBL is designed to give students the freedom to explore and maximise their potential, enhancing a constructivist model of instruction that is based on interactions with the environment, a cognitive conflict that stimulates learning, and knowledge that involves negotiation with others. PBL proposes a shift in the learning process, from the point of view of the teacher, the student, or even in the assessment. Savin-Baden and Major⁸ state that teachers must create relevant projects and problems and should provide options for exploration and investigation by the students. These experiences place the knowledge and skills in a more authentic context, as students determine what they want to know and improve in the process of searching for solutions. When participating in the projects, students move towards educational goals and expectations, and decide what they need to know to succeed in the discipline.⁹ At the same

¹Maggi Savin-Baden, "Problem-Based Learning" in Miriam E David and Marilyn J Amey (eds), *The SAGE Encyclopedia of Higher Education* (SAGE Publications, Inc 2020) 1201.

²Charles E Engel, "Not Just a Method but a Way of Learning" in David Boud and Grahame Feletti (eds), *The Challenge of Problem-Based Learning* (Psychology Press 1997).

³LuAnn Wilkerson and Wim H Gijsselaers (eds), *Bringing Problem-Based Learning to Higher Education: Theory and Practice* (Jossey-Bass Publishers 1996).

⁴Peter Schwartz, *Problem-Based Learning* (Routledge 2013).

⁵David H Jonassen and Woei Hung, "Problem-Based Learning" in Norbert M Seel (ed), *Encyclopaedia of the Sciences of Learning* (Springer US 2012) 2687.

⁶Shannon Massie Chance, "Problem-Based Learning: Use in Engineering Disciplines" in Miriam E David and Marilyn J Amey (eds), *The SAGE Encyclopedia of Higher Education* (SAGE Publications, Inc 2020) 1198.

⁷Jennifer Kretchmar, "Problem-based Learning" in *Salem Press Encyclopaedia* (2019).

⁸Maggi Savin-Baden and Claire Howell Major, *Foundations of Problem-Based Learning* (Open University Press 2004).

⁹Renato Matos Lopes, Moacelio Veranio Silva Filho and Neila Guimarães Alvez (eds), *Aprendizagem baseada em problemas: fundamentos para a aplicação no ensino médio e na formação de professores* (1st edn, Publuki 2019).

time, the teacher is responsible for promoting research and discovery activities, and students are expected to gradually become responsible for their own learning, gain independence, and enjoy the experience, through guided practices. In good projects, students learn how to apply knowledge to the real world, and use it to solve problems, answer complex questions, and create high-quality products.¹⁰

Savin-Baden and Major¹¹ underline some of the student characteristics developed while using this method. Students evolve from passive listeners to active collaborators and problem solvers; and from a shy and cautious person to someone who exposes themselves and takes risks. The sense of responsibility is also strengthened, and competitive work with peers is transformed into cooperative and collaborative work. Likewise, the students' view of the teacher is altered. Instead of being only experts and authority figures, teachers become tutors, and the students and colleagues reveal themselves as sources of knowledge and authority. In this sense, the authors describe the PBL student as one who makes decisions, has self-directed learning, solves problems, develops their communication, is a humanist, and an explorer; moreover, PBL enhances critical and creative thinking, as well as resource-management skills. A PBL student is, therefore, an active person who takes charge of her learning and is committed to her ecosystem.

In summary, PBL encompasses problem-centred instruction and the use of authentic complex problems; it seeks the active acquisition of information, and strategies by the student, appropriate to their skills, level of experience, and educational needs. Students, although guided, decide on the best way to learn, the necessary resources, the pace, and part of the activity's strategy, with the collaboration and facilitation of the teacher. Authenticity is sought (realistic and applicable cases), and a key to a deeper disciplinary knowledge understanding.

According to Ertmer and Glazewski,¹² there are five main characteristics of PBL. These include "the use of authentic ill-structured problems that are introduced before all the relevant content is learned; the support for, and facilitation of, active self-directed student learning; the scaffolding of students' knowledge building; cooperation and collaboration among teachers, students, and community members; and authentic assessment of both process and product, including evidence-based recommendations for problem resolution".

1.2. Problem-based learning in legal education

Working collaboratively, communicating, and influencing others through critical legal reasoning are key skills in legal training.¹³ Legal education has historically been grounded on active learning techniques, particularly the Socratic dialogue, writing exercises, simulations, and discussions.¹⁴ In fact, the origins of legal education in

¹⁰John Larmer, "Gold Standard PBL: Essential Project Design Elements" (Buck Institute for Education 2015) June 21st 2021. https://my.pblworks.org/resource/document/gold_standard_pbl_essential_project_design_elements

¹¹Savin-Baden and Major (n 8).

¹²Peggy A Ertmer and Krista D Glazewski, "Problem-Based Learning: Essential Design Characteristics" in Robert A Reiser and John V Dempsey (eds), *Trends and Issues in Instructional Design and Technology* (4th edn, Pearson 2018).

¹³Steven I Friedland, "Adaptive Strategies for the Future of Legal Education" (2015) 61 Loy L Rev 211.

¹⁴Gerald F Hess, "Principle 3: Good Practice Encourages Active Learning" (1999) 49 *Journal of Legal Education* 401.

some legal systems were entirely based on active learning techniques, particularly PBL, with moot activities, during which students are asked to argue points of law before a simulated court and are expected to answer questions from the bench, assuming a role (petitioner or defendant) in simulated cases.¹⁵ In moots, students have autonomy in constructing their knowledge, based on the case materials that they were provided with, and their research. Clinical legal education is a part of legal education in some universities in common law systems and it encompasses a full real-life problem-based learning experience through legal clinics, judicial internships and fieldwork programmes.¹⁶

This leads us to the conclusion that active learning is particularly well suited for legal education. Caron and Gely¹⁷ explain how law teachers can use both old and new technologies to increase student engagement in the classroom, and state that active learning requires students to undertake higher-order thinking, forcing them to engage in analysis, synthesis, and evaluation, and underlining that students must engage in other learning activities during class time exploring received information, in order to stimulate memory and retain contents in a deeper and significant way. In a cross-sectional study carried out in the United States and following a population of law students for three years, researchers found that the active methods used systematically improved students' grades.¹⁸

However, as a curricular analysis of law programmes can demonstrate, legal education is based on a system of silos¹⁹ – walled-off components – grounded on the assumptions that this will allow each teacher to cover an area of substantive law comprehensively, and that critical thinking will arise out of using the problem method,²⁰ where students are presented with a legal case to which they should apply knowledge previously obtained by reading and lectures. In Portugal, the most common methods used in legal education are lectures followed by exercises in which the law is applied to a set of facts provided to each student. The work is individual, and the student is expected to present the correct legal framework to the facts, usually by identifying those that are and are not in accordance with the law.

Despite the fact that the problem method is an active learning technique, the essentially linear fashion in which problems are put, the individual nature of the work, and the simplistic one-sided nature of the problems (which usually have only one right answer) seem incompatible with the skills that legal education sets out to develop. Carlini²¹ maintains that legal education is still marked by little stimulating practices, like the prevailing use of the traditional expository class pattern, in which the teacher is the

¹⁵Andrew Lynch, "Why Do We Moot? Exploring the Role of Mooting in Legal Education" (1996) 7 *Legal Educ Rev* 67.

¹⁶Cath Sylvester, Jonny Hall and Elaine Hall, "Problem-Based Learning and Clinical Legal Education: What Can Clinical Educators Learn from PBL?" (2004) 4 *International Journal of Clinical Legal Education* 39.

¹⁷Paul L Caron and Rafael Gely, "Taking Back the Law School Classroom: Using Technology to Foster Active Student Learning" (2004) 54 *Journal of Legal Education* 551.

¹⁸Patricia W Hatamyar Moore and Todd P Sullivan, "Active Learning and Law School Performance" (2011) 3 *Journal of Multidisciplinary Research* 67.

¹⁹Friedland (n 13) 216–17.

²⁰Michael L Richmond, "Teaching Law to Passive Learners: The Contemporary Dilemma of Legal Education" (1996) 26 *Cumb L Rev* 943; Jos HC Moust, "The Problem-Based Education Approach at the Maastricht Law School" (1998) 32 *The Law Teacher* 5, 6–9.

²¹Angélica Lucía Carlini, "Aprendizagem baseada em problemas aplicada ao ensino de direito: Projeto exploratório na área de relações de consumo" (Doctoral thesis, Pontifícia Universidade Católica de São Paulo 2006) <<https://tede2.pucsp.br/handle/handle/9965>>

knowledge transmitter for the students who passively receive it. Boyle²² argues that it is necessary to change the law teaching paradigm, which exhausts teachers in classes, and students passively listen and take notes, even though this seems to be their preference.

There are few reported experiences of the structural use of PBL in legal education,²³ but the lack of study on their results is limiting the generation of any relevant knowledge on the topic. An experiment at Limburg University reported a significant increase in test scores by students guided by student tutors using problem-based learning.²⁴ Notably, Maastricht University has implemented an entire law degree with a curriculum structurally built on a problem-based learning approach.²⁵ Students are taught in curricular units in which subject-matters and skills are integrated around a common central theme. Notwithstanding positive outcomes, this long 30-years' experience also highlights the difficulties in implementing PBL in such a structural fashion: with time, students, faculty, and the organisation have adapted and changed their practice in ways that hinder the full potential of PBL.²⁶ More modest experiences, in which PBL is used only in specific courses, are very scarce²⁷ or are voluntary and a complement to traditional learning, making their results irrelevant, since no comparison between methods can be drawn.²⁸ Havelock,²⁹ in a study on his own law classes, used traditional and active methods for teaching and compared the results. He concluded that the incorporation of active learning exercises – including those based on problems – even in large lectures, is perceived by students as beneficial to their learning, and even preferred over passive methods. Recently, an experience in India using PBL in a tax law course highlights faculty and students' difficulties in adapting to a new teaching method, raising concerns on the need for much more time and on increasing workload for the teachers, and suggesting partial and progressive implementation.³⁰

This reveals an apparent contradiction: PBL seems particularly adequate for legal education, but it is rarely used and is extremely difficult to implement structurally throughout an entire law degree. Law is a disciplinary area that allows for the application of several active learning strategies, namely “the use of games; collaborative and cooperative projects; in-class critiques of writing, problem-solving, and oral presentation; and simulated workplace-legal problems”.³¹ As such, providing a learning

²²Robin Boyle, “Employing Active-Learning Techniques and Metacognition in Law School: Shifting Energy from Professor to Student” (2003) 81 *University of Detroit Mercy Law Review* 1.

²³Jos C Moust and Herman J Nuy, “Preparing Teachers for a Problem-Based, Student-Centered Law Course” (1987) 5 *Journal of Professional Legal Education* 16; Richard Grimes, “Delivering Legal Education through an Integrated Problem-Based Learning Model – the Nuts and Bolts” (2014) 21 *Int'l J Clinical Legal Educ* 228; Richard Grimes, “Problem-Based Learning and Legal Education: A Case Study in Integrated Experiential Study” (2015) 13 *REDU: Revista de Docencia Universitaria* 361.

²⁴JHC Moust, ML De Volder and HJP Nuy, “Peer Teaching and Higher Level Cognitive Learning Outcomes in Problem-Based Learning” (1989) 18 *Higher Education* 737.

²⁵Moust (n 20).

²⁶JHC Moust, HJM Van Berkel and HG Schmidt, “Signs of Erosion: Reflections on Three Decades of Problem-Based Learning at Maastricht University” (2005) 50 *Higher Education* 665, 666.

²⁷Paul Maharg, “‘Democracy Begins in Conversation’: The Phenomenology of Problem-Based Learning and Legal Education” (2015) 24 *Nottingham Law Journal* 94; Yang Joel Wong, “Harnessing the Potential of Problem-Based Learning in Legal Education” (2003) 37 *The Law Teacher* 157.

²⁸Moore and Sullivan (n 18).

²⁹Rohan Havelock, “Law Studies and Active Learning: Friends Not Foes?” (2013) 47 *The Law Teacher* 382.

³⁰S Shalini, “A Study on the Effectiveness of Problem-Based Learning in Legal Education in India” (2021) 8 *Asian Journal of Legal Education* 95, 106–109.

³¹Boyle (n 22) 5.

environment that stimulates and encourages active learning is not only better for student learning, but it also frees teachers from work that often proves ineffective, transferring the active effort on to students.

The reasons for the infrequent use of PBL in legal education seem to be similar to those concerning other areas of higher education. To name a few: the teaching staff misunderstand the nature of PBL (and assume it relates to problems given in Socratic teaching, or that lectures should be followed by problems as exercises); no impulse for innovation and efficacy, since profitability is not at stake; PBL is seen as resource intensive and time consuming; assessment is difficult because students usually work in teams; institutionalised practices militate against implementing new practices; course coverage is compromised; and academic expertise is devalued.³²

1.3. The present research

To the best of our knowledge, there are no reports of the use of this method in legal education in Portugal. The current paper describes an experiment that, albeit circumscribed to a class, is useful insofar as it highlights the possibilities and alternatives that PBL may bring to improve students' learning.

We assess teacher and student perceptions on the efficacy of PBL activities on learning and developing certain skills, both of which constitute the learning outcomes of the course. We expect positive effects of PBL activities as perceived by both teacher and students, as reflected in behaviours such as collaborative work, oral presentation, and research skills, and in a deeper understanding of the subject. We also expect effects of PBL activities in pedagogical features such as customised tutoring for each student, and facilitating student–teacher interaction. Student perception of the efficacy of PBL activities is assessed with survey methods. We predict that students' assessment will depend on their own personal preferences and personalities. This would suggest that even when PBL activities are clearly a better method than traditional classroom techniques, the implementation of PBL must consider the impact on students who are personally less inclined to group activities and how this problem may be addressed.

2. Materials and methods

2.1. Overview

This work presents a case study of the application of the PBL method to the teaching of International Law, considering both teacher and student perceptions at the end of the course. We sought to combine conceptual lines from the field of education and active methods – for better learning – to analyse and reflect on intervention in the university context.

The School of Law of the University of Lisbon teaches undergraduate and postgraduate courses in law. In its undergraduate programme, International Law is a second-year three-month course, with a total of two contact hours per week. Even though evaluation through a final exam is also available, students are by default enrolled in classes in which attendance is mandatory and participation in class activities is the basis for ongoing

³²Maria Tzannes, "Problem Based Learning in Legal Education: Intentionally Overlooked or Merely Misunderstood" (1997) 31 *The Law Teacher* 180; Moust, Van Berkel and Schmidt (n 26) 675.

evaluation. In this case, the final grade was based on one written test, on the drafting and oral discussion of one paper, and on the participation in class activities. The PBL activity that we will present was included in the component concerning class activities. In terms of evaluation, students had to participate in the activities, but individual presentation of statements was voluntary and it was the only graded part of the activity.

The class had 19 students, and it was mainly composed of exchange students in the Erasmus Programme from five countries (Austria, Italy, Turkey, France, and Germany), aged between 19 and 24 ($M = 21.88$), and 75% were female. Most students had previously studied International Law (62.8%).

Flipped classroom elements were present, since for most classes students were expected to read a chapter of the book before class, so as to be able to engage in class activities. For the purpose of comparison, class activities were organised using different methods throughout the semester (see [Table 1](#)).

There were two types of classes:

- (1) Classes 1, 2, and 4: all the preparation work was prior and individual (reading the chapter, reading judgments, studying problems); parts of the class were lecture-based, and some had discussion of questions or cases presented by the teacher;
- (2) Classes 3 and 5 to 7: only the reading of a chapter was prior and individual; classroom work was collaborative, in groups of three or four students. In Class 5, the basis was the typical problem method: facts were laid down and students were expected to present a legal solution to the case. However, roles were assigned to each group of students (petitioner or defendant); this change was meant to lead students to actively seek a legal pathway to a solution that best served their role. In Classes 5 to 7, PBL activities were conducted.

2.2. Problem design

Understanding the relation between international politics and geo-strategic relations among states, on the one hand, and International Law, on the other, is a relevant learning outcome of this course. Therefore, the problems for PBL activities in Classes 5 and 6 were designed based on the Model United Nations Programme, in which students roleplay as delegates to the United Nations and simulate United Nations Committees. As mentioned ([section 2.1](#)), students were divided into groups of three or four and each group represented one state. In Class 7, five groups were representing national citizens of different states, and one group was representing a non-governmental organisation of one state.

The drafting of the problems followed some known basic rules for this purpose: the description was easy to read and to understand; the facts presented were realistic and relevant; the problems addressed specific outcomes in International Law topics and implied the development of transferable skills (e.g. discovery of relevant legal and political information; legal reasoning; argumentative skills); and they were challenging, since they were not linear, but also not entirely unfamiliar (see [Table 2](#)).³³

The intended learning outcomes of the PBL activity that were considered in the designing of the problems were:

³³Stephen Nathanson, "Designing Problems to Teach Legal Problem Solving" (1998) 34 *California Western Law Review* 325.

Table 1. Course plan, including dates, themes, and planned activities.

Order	Date	Theme	Activities
1	12 Oct	Identity, origins, and evolution of international law; international law and domestic law	Lecture
2	19 Oct	Sources of international law: customary law, general principles of law	Lecture
3	26 Oct	Sources of international law: treaties	Case-law analysis
4	2 Nov	The subjects of international law: states and non-state actors	Problem method with roleplay Case discussion: Kosovo; Juan Guaidó; German v. Italy (International Court of Justice (ICJ))
5	9 Nov	The subjects of international law: international organisations; the UN system	PBL
6	16 Nov	The subjects of international law: the collective security system and the ICJ	PBL
7	23 Nov	Human rights international protection	PBL

Table 2. List of themes and corresponding problems.

Theme	Problem
The UN system	<p>In May 2020, the President of the Republic of Kosovo declared publicly that Kosovo intended to join the United Nations as soon as possible.</p> <ul style="list-style-type: none"> - <i>Please present your statement in the Security Council meeting.</i> - The President of the United States has tweeted "We need to revise national contributions to the UN!! We pay A LOT more than anyone else! It's unfair! Covfefe!!" - <i>Please present your statement in the United Nations General Assembly 2020 session.</i> - The Kingdom of Bhutan's Ambassador to the United Nations has submitted a Resolution to the United Nations General Assembly session of 2020 concerning the current situation in Myanmar, recommending the adoption of peace-keeping measures by the Security Council. - <i>Please present your statement in the United Nations General Assembly 2020 session.</i>
Collective security system and the ICJ	<p>Eureka! An effective vaccine against Covid-19 has been invented in a laboratory in Germany. The High Representative of the European Union for Foreign Affairs and Security Policy declares that the vaccines should be primarily produced and distributed in the European Union, and afterwards be made available to other countries. Russia protested immediately, advocating for a duty to equally distribute vaccines to every state, depending only on the size of its population. Growing concerns over the presence of troops next to Kaliningrad are addressed in diplomatic meetings between several Western states. France declares that it will submit the matter to the UN Security Council.</p> <ul style="list-style-type: none"> - <i>Please present your statement in the Security Council meeting.</i> - The UN Security Council has discussed the international situation but failed to approve a resolution. A military alliance between the United States of America, the United Kingdom and Germany launched a military offensive and occupied the Kaliningrad Oblast. <p><i>Please present your statement in the Security Council meeting.</i></p> <ul style="list-style-type: none"> - The UN Security Council is at a deadlock. Russia and China decided to refer the case to the International Court of Justice, against the United Kingdom, the United States, France, and Germany. - <i>Please present a brief outlining your case.</i>
Human rights international protection	<p>An effective vaccine against Covid-19 has been invented in a laboratory in the United States of America. Nearly 90% of the foreseeable production in 2021 has already been acquired by the European Union and the United States of America.</p> <p>You are a group of high-risk citizens of [state] that will not be able to get access to the Covid-19 vaccine in the foreseeable future/NGO of [state]. You intend to hold your country responsible for violation of your right to life, on the grounds of insufficient action to protect your health.</p> <ol style="list-style-type: none"> 1. <i>Is there a regional treaty for the protection of these human rights?</i> 2. <i>Can you, as an individual, access a regional human rights court or treaty body (commission, committee) specialising in the protection of human rights? Can you access an international court specialising in the protection of human rights (please consider the position as amicus curiae)?</i> 3. <i>If so, is the jurisdiction voluntary?</i> 4. <i>Are the decisions binding?</i>

- (1) Acquisition of knowledge related to the evolution and the current principles and rules of international law, considering the different subjects and sources;
- (2) Understanding of the relationship between states' political action and practice in international relations and the formation and development of international law;
- (3) Internalise the rules on the functioning of the United Nations system and ways of monitoring compliance with international law;

Table 3. List of groups and nationality of group members.

State/NGO represented	Nationality of group members		
Group 1 Indonesia	Portuguese	French	Italian
Group 2 Argentina	Turkish	Portuguese	French
Group 3 Nigeria	Austrian	Turkish	Portuguese
Group 4 Russian Federation	Italian	German	Portuguese
Group 5 United Kingdom	Portuguese	French	German
Group 6 United States of America	Portuguese	German	French

- (4) Development of orality, analytical and argumentative skills in the area of international law, as well as negotiation and group work;
- (5) Development of skills concerning information research and online database usage.

2.3. PBL activities (procedure)

Students were previously distributed in groups by the teacher. Students were not allowed to choose their groups. There were two main reasons for this method, both with the purpose of enhancing the intended learning outcomes concerning collaborative and social skills: distributing students who were most inclined to activities into separate groups; and avoiding group-formation by students based on nationality. Table 3 shows an example of the distribution of students from Class 7.

At the beginning of each class, the teacher would inform the students of group composition and distribute the list of facts and tasks for the class activity. Students would then convene in groups and analyse the facts, identifying legal problems that could be at hand, and searching online for legal and political information, such as the applicable law and precedent political and legal standings on the topic or related topics from the state that they were representing. Students were informed that they were expected to do this research during class and that the statements and answers that they were to present had to take into account and be in line with precedent activity by the state they were representing. The teacher would serve as a tutor during class, guiding the group through their search, when necessary, but not providing the answers to the problems.

In Classes 5 and 6, group discussion lasted for around 90 minutes. Groups had to present the oral statement in representation of their state at the beginning of the next class, for a total of six minutes per group. All students decided that they wished to present an oral statement, even though it was voluntary. Therefore, identifying the legal problems and discussing them was a group activity, but the drafting and presentation of the statement was a task performed individually, by decision of the students. Differently, in Class 7 the answers to the questions were to be introduced in an online document simultaneously by all students, which consisted of a table (see Table 4).

At the end of this class, the results were projected on screen, and the teacher discussed the answers provided, so that every student would become familiar with the systems that the other groups had studied.

Table 4. Document shown to students in Class 7.

State	Is there a regional treaty?	Is there individual access to HR system?	Voluntary jurisdiction?	Binding decision?
Argentina				
Indonesia				
Nigeria				
Russia				
UK				
USA				

2.4. Survey on student perceptions

At the end of the semester, a survey was conducted on the students' perceptions of the different methods that were used. The survey's introductory text was as follows:

During this course, you have experienced classes which consisted of lectures and case-law analysis (for example, the introductory class or the class on customary law), and classes based on problem solving by groups of students (for example, the class on the law of the treaties or the UN collective security system).

Students were then asked two questions, with multiple-choice answers: which of the two models did they personally prefer, and which did they think was most effective for their learning. Another part of the survey focused on interactions. Students were asked to grade how easy it was to engage and interact with colleagues and with the teacher. A final part of the survey consisted of a general appreciation of the course, where students were asked to grade their overall appreciation of the course and classes on a scale, the performance of the teacher, and whether the course had matched their expectations.

The survey was answered by 16 students, which corresponds to 84.2% of the students that participated in classroom activities (19 students).

3. Results

3.1. Survey on student perception

Regarding student preferences between the two methods, the two methods tied (see [Table 5](#)). Only two students reported liking both methods equally and no student reported disliking them equally. Concerning the perception of students on which is the most effective model for learning, a narrow majority opted for "the lecture/case-law analysis". Three students reported liking both methods equally and no student reported disliking them equally.

On this topic, students were asked to grade on a 5-point rating scale (1 – Not easy at all; 7 – Very easy) how easy it was to engage and interact with both colleagues and teacher. No one answered 1 (see [Table 6](#)).

Table 5. Distribution of students' ratings of personal preference and perception of effectiveness for the learning models.

	The lecture/case-law class	The problem-solving in groups	I liked both equally	I disliked both equally
Personal preference	43.8% (7)	43.8% (7)	12.5% (2)	0
Perception of effectiveness	43.8% (7)	37.5% (6)	18.8% (3)	0

Students reporting superior efficacy and personal preference for the PBL activities also reported more ease in engaging and interaction with colleagues (see [Figures 1 and 2](#)); students with more difficulties never preferred PBL activities.

Students reported their overall appreciation of both course and classes and the performance of the teacher on a 7-point rating scale, in which 1 is “Negative” and 7 is “Positive”. We registered an overall average appreciation of 6.19 for the course and classes with the majority of responses (43.8%) being 6. For the performance of the teacher, we registered an overall average appreciation of 6.67, with the majority of responses (81.3%) being 7.

Overall, the course matched every student’s expectation. The respondents were asked “Did this course match your expectations?” and chose one of five responses: 12.5% selected “Yes, with reservations”, 62.5% selected “Yes”, and 25% selected “It exceeded my expectations”. “No” and “It strongly frustrated my expectations” registered no responses. All students would recommend this course to a friend or colleague, 20% with reservations.

Finally, students rated their learning during the course on 5-point scale (1 – Negatively; 5 – Positively). The average was 4.125. On average, students who had previously taken an “entire course” on the subject rated lower on their learning (3.86) than those who had only “a few basic notions” or “no” knowledge whatsoever (4.33). Students with previous knowledge on the subject rated higher on average on the item of overall appreciation of the course ([Table 7](#)).

Table 6. Students’ ratings of ease in engaging and interacting with colleagues and teacher.

	2	3	4	5
With colleagues	18.8% (3)	6.3% (1)	25% (4)	50% (8)
With teacher	0	0	25% (4)	75% (12)

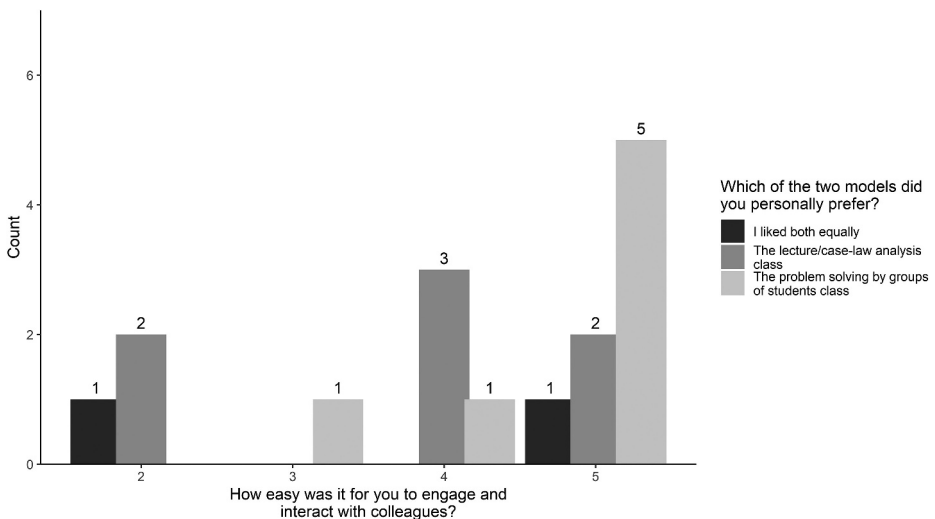


Figure 1. Student ratings of engagement and interaction with colleagues by rating of learning effectiveness.

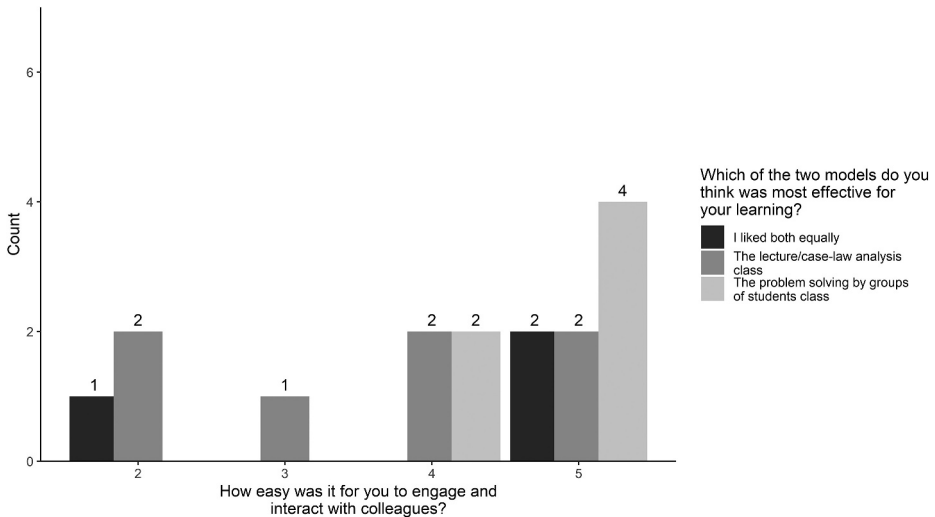


Figure 2. Student ratings of engagement and interaction with colleagues by preferred model.

Table 7. Students' ratings according to previous knowledge of international law.

Previous knowledge of International Law?	How do you assess your learning during this course? (1–5)	What is your overall appreciation of the course and classes? (1–7)
No	4.33	6
A few basic notions	4.33	6.33
An entire course	3.86	6.27

A final open-ended question allowed students to add comments. Three students commented very positively on an active learning environment (“We were not afraid to participate in the class”; “This was the most interactive law class experience of my career and also very close to my understanding of ideal education”), group work (“good in every way”), practice-oriented learning (“We were putting public international law into practice”), and on the flipped-classroom method (“I really liked the concept of the course: the fact that we have to read a chapter of the book at home and then discuss it in class”; “I think the book was very important to follow a specific path, and reading chapters before classes could be very useful”). No improvement suggestions were made.

3.2. Teacher's perception

The teacher on this course has 14 years of experience in teaching the undergraduate course at the School of Law of the University of Lisbon, four of which in International Law. The results here revealed are the result of the teacher's perception considering previous experience teaching using traditional methods and a comparison of students' progress during classes using PBL.

Regarding a comparison with the experience in previous years, PBL leads to higher levels of engagement and enthusiasm of students in class activities, since not only already motivated students will be engaged, but also those who are

usually more detached. This led to more student participation in class (since all students participated and presented oral statements, and not just a few); this was particularly clear when groups were smaller. Still, comparing with previous experiences, PBL also allowed for closer follow-up on the students' progress, because the division into groups freed the teacher from always addressing the entire class. This led to an improvement in the student–teacher relation, with greater levels of confidence for students, as opposed to what in legal education is usually a formal interaction.

The average result on grades for this class was 14 (on a 0–20 scale), which is much higher than results on this course in previous years (average of 10). The impact of students' previous knowledge on these specific results is discussed in [section 4.3](#).

As for results concerning students' progress during classes using PBL, students' interactions and confidence in group activities and in presenting the outputs of their work increased progressively from Classes 5 to 7. Consequently, all students increased their grades on oral performance, except for those who had already excellent skills. Group dynamics also improved greatly, with students working collaboratively (e.g. sharing workload and then sharing their points of view), enhancing information research skills and online database usage, and having the confidence to pose specific questions to the teacher and asking for guidance when necessary.

Considering the course globally, the teacher's perception is that there was a lack of opportunity for final reflections and conclusive systematising of the course's legal content.

4. Discussion

4.1. Students' perceptions

The results obtained through a survey on the students' perceptions partially confirm the hypothesis that motivated this study. We concluded that students' preferences are almost symmetrically divided, since approximately half the students preferred traditional classes, and the other half preferred PBL. But students with better social skills (i.e. who reported ease in interactions with colleagues) and students with a higher degree of knowledge on the topics at hand (i.e. those who had previously taken an entire course on the subject) reported greater preference for PBL. Also, students' opinions on the efficacy of PBL depend greatly on their personal preferences and situation. For example, the experience at the University of Maastricht revealed that first-year students were more diversified in motivation, expectations, and capabilities, and this presented a problem for obtaining the maximum advantage of PBL.³⁴ PBL activities' full potential for learning seems to depend on the students' confidence (by already being familiar with the topic and/or for personal reasons), and this should be a major concern for teachers using this method.

It is also relevant to note that students are noticeably more at ease in interactions with the teacher. These results ([section 3](#)) confirm the teacher's perception on the development of a better student–teacher pedagogical relationship using PBL, when compared with traditional methods, since PBL allows for customised interactions with all students, and not just the most socially skilled ones.

³⁴Moust (n 20) 34–35.

Both these points reinforce the conclusion that while there may be some resistance to PBL, this method is particularly useful precisely for those who reported greater difficulty in collaborative work. Using traditional methods with students who already prefer it for personal reasons will only reinforce the difference between students, and enable practices that are not compatible with future workplace activities. However, this also means that teachers must be particularly attentive to the dynamics in groups, so as to respect personal preferences and avoid an unpleasant learning environment. This will have effects on balancing individual work and collaborative work and on the creation and functioning of groups of students.

It is also worth noting that students with previous knowledge of International Law rated both higher overall satisfaction with the course and lower satisfaction on improving their learning. This may be the result of having previous knowledge on the subject: on the one hand, this gave students more confidence, which made them enjoy a different learning method; on the other hand, it gave students the feeling that they had not learned as much as students with no previous knowledge. However, this also drew our attention to the fact that in this experience the learning outcomes concerning skills – i.e. other than learning about International Law – were not made explicit by the teacher. This could have had an impact on the students' perceptions concerning their learning, since the questions were probably interpreted as concerning only knowledge on law, and not referring to skills. This impact may be very relevant, as these skills were never identified as relevant by the teacher, and the standard procedure is based only on substantial legal knowledge as a relevant learning outcome.

4.2. Teacher's perceptions

Results regarding teacher's perceptions lead us to the conclusion that traditional methods hinder individualised approaches since teachers are permanently addressing the entire class. This has an effect of discouraging students with poorer academic and social performances from participating in class activities and interacting with the teacher. The shift from an authority figure to a mentor creates confidence in the student-teacher relationship, which has known positive effects on the learning outcome. Also, PBL activities in small groups incentivised engagement by all students, as the teacher helps and advises but does not direct, allowing student participation to turn into active engagement with learning.³⁵

Moreover, PBL provides significant improvement in the pedagogical dynamic, since teachers have the possibility of intervening in the learning process while it is occurring, guiding students when they have lost their way or can enhance their results. Traditional classes offer very limited possibilities on providing feedback to all students, since classes are focused on unilateral lecturing or on correcting the exercises. Being present at the time of the analysis and discussion of the problem allows for early teacher intervention, which limits frustration and discouragement of students when taking the wrong path. Also, the fact that teachers are present while students discover problems and build knowledge allows greater space for error. Admitting the possibility of error from students is a prerequisite for a more fruitful and deeper learning and understanding. Students' confidence and performance improved over time; other

³⁵Robert Delisle, *How to Use Problem-Based Learning in the Classroom* (ASCD – Association for Supervision and Curriculum Development 1997).

experiences have also indicated that both faculty and students become more confident with time as they get acquainted with the rules and with each other.³⁶ This reinforces the conclusion that the personal and social dimensions must be a concern for the teacher since PBL may only be fully effective in developing new skills if a good learning environment is achieved.

As regards skills development, PBL is more flexible and allows for the development of skills that would otherwise be excluded from classroom activities or from the curriculum objectives, such as resource research, orality, collaborative work, self-confidence, and self-regulation. From this perspective, PBL activities hold strong benefits in terms of providing a comprehensive legal education.

Finally, striking a balance between different types of activities in the classroom (e.g. lecture/PBL) offers the possibility of overcoming potential shortcomings of PBL (e.g. diffuse learning and lack of organised structural thought on the topic at hand) and builds teachers' and students' confidence in the learning outcomes. However, maintaining PBL rules is difficult for both students and faculty. PBL requires that teachers resist the impulse to provide answers, instead of guiding students through possible pathways to find them.³⁷ The relationship between different activities and the diversified roles that teachers have in them is a crucial part of building a coherent programme that includes active learning methods. This is also relevant for maintaining a balance between autonomy and known problems such as loss of student motivation or interest.³⁸

Awareness is required to identify how subtle changes may occur over time that undermine the full potential of PBL, namely concerning the maintenance of self-study and autonomy, and in understanding the complementary role of lectures.³⁹

4.3. Limitations and further research

It was not possible to compare in detail and draw conclusions from the results on grades with those from previous years since this class had a very high percentage of students that had previous knowledge on the course subject; this is also a result of the fact that previous experiences included only students enrolled in the full undergraduate course, and not Erasmus students. In fact, limitations concerning comparability on this topic seem very hard to overcome.⁴⁰

Further research would be necessary on how to design and implement learning methods in ways that would allow for measuring differences between them on effective long-lasting learning outcomes. Also, it would be essential to obtain deeper knowledge on which strategies are most effective for developing students' confidence in the classroom, considering that PBL activities' success depends greatly on it. One of these strategies is to consider in advance the relevance of certain criteria in the formation of groups and how it may influence group dynamics and success, such as group size, individual and ability differences, past student experience, and diversity of group

³⁶Shalini (n 30).

³⁷Moust (n 20) 35–36; Moust, Van Berkel and Schmidt (n 26) 672–73.

³⁸Moust, Van Berkel and Schmidt (n 26); Jerome I Rotgans and Henk G Schmidt, "Effects of Problem-Based Learning on Motivation, Interest, and Learning" in Mahnaz Moallem, Woei Hung and Nada Dabbagh (eds), *The Wiley Handbook of Problem-Based Learning* (John Wiley & Sons, Ltd 2019) 157.

³⁹Moust, Van Berkel and Schmidt (n 26) 676.

⁴⁰Herco TH Fonteijn and Diana HJM Dolmans, "Group Work and Group Dynamics in PBL" in Mahnaz Moallem, Woei Hung and Nada Dabbagh (eds), *The Wiley Handbook of Problem-Based Learning* (John Wiley & Sons, Ltd 2019) 200–02.

members. Another topic of paramount importance is learning assessment and how skills and life-long learning may be integrated in evaluation.⁴¹ In this study, we have reported an experiment that combines traditional and active learning methods, and assessment was conducted in a traditional fashion. However, matching assessment and instruction is always essential, and even more so in courses using unorthodox techniques such as PBL, as this learning method is a flexible and adaptable instrument in a constantly evolving ecology for agile learning and teaching.⁴²

4.4. Conclusions

The conclusion of this experience is that PBL is a flexible pedagogical method that allows for the development of a vast array of highly relevant skills in legal education and for all legal professions. Making learning outcomes for skills explicit is essential to enhance students' performance and perceptions. PBL also creates a better learning environment and customised student–teacher relationships, offering room for feedback and error, which are key features for deeper learning and understanding. An important finding from the current study is that students' resistance to PBL activities arises partially from underdeveloped social and collaborative skills. These deficiencies are not tackled by traditional teaching methods, which are, thus, inadequate. Furthermore, the literature on PBL is, to the best of our knowledge, lacking insights into the potential moderating effect of this factor on the effectiveness of PBL methods, as well as how to circumvent it.

Great care and study should be put into the building of a learning environment that is not disagreeable for some students and into the planning of the classroom activities at a global level. Balance between different types of activities may be key to overcoming resistance of both students and teachers to the shift towards a student-centred paradigm.

As a consequence of this study, the teacher of this course has implemented activities that follow PBL classes, such as short lectures, requiring that students present a summary of their findings and designing conceptual maps. This has allowed for a combination of active learning and the development of certain skills with more structured reasoning and reflection on the obtained knowledge on law. The purposes of all activities are now set out and explained to students before and after the activity, making the expected learning outcomes clear (in terms not only of knowledge of the law, but also of skills and competences).

Disclosure statement

No potential conflict of interest was reported by the authors.

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⁴¹Erik Driessen and Cees Van Der Vleuten, "Matching Student Assessment to Problem-Based Learning: Lessons from Experience in a Law Faculty" (2000) 22 *Studies in Continuing Education* 235.

⁴²Megan Yih Chyn A Kek and Henk Huijser, *Problem-Based Learning into the Future: Imagining an Agile PBL Ecology for Learning* (Springer 2016).