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CLIMATE CHANGE EDUCATION IN BUSINESS SCHOOLS

THE EXAMPLE OF THE CLIMATE AND BUSINESS CERTIFICATE AT HEC PARIS

November 2023

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Acknowledgements: Sephra Abraham, François Collin, Carole Decamps, Cécile De Lisle, Rodolphe Durand, Jean-Michel Gauthier, Brinda Kulkarni, Laurence Lehmann-Ortega, Catherine Ly, Anne Michaut, Adriana Pineiro-Coen, Marie-Pierre Seyfried, Amanda Sørum, Laurianne Thoury

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1. Introduction

The effects of climate change, such as rising temperatures, melting glaciers, and sea-level rise, are already having severe impacts, including extreme weather patterns, loss of biodiversity, and acidification of the oceans, etc. (IPCC, 2023). Climate change is thus an urgent and pressing issue that requires immediate attention and action by various actors ranging from individuals and companies to governments and supra-national organizations. In the face of this planetary urgency, it is essential that we educate current and future leaders about the science behind climate change, its impact on the natural world and human societies, and the actions we can take to mitigate and adapt to these effects. Businesses today are expected to play an increasingly active role in mitigating climate change, e.g., by reducing their greenhouse gas (GHG) emissions, introducing circular business models, and developing climate-friendly technologies.

In this light, the present case study seeks to explore the importance of climate change education in business schools and analyze how climate change education is being integrated in the curricula of business schools using the example of the Climate and Business Certificate program developed at HEC Paris within the Society and Organizations Institute. As leading education institutions grapple with the challenge of how to properly incorporate climate change into already burgeoning curricula, it is essential that we analyze the effectiveness of existing methods to develop new models for educational excellence. Moreover, by discussing best practices from HEC Paris and delivering key lessons, this case study aims to provide an outlook on the ways in which stakeholders in business need to approach the growing challenge of climate change. Finally, the case study highlights how climate change education programs enhance the knowledge of its students and promotes collaborative initiatives amongst business schools.

The methodology for this case study is based on a desk review of existing literature, interviews with key personnel involved in the development of the Climate and Business Certificate at HEC Paris, as well as an evaluation survey of students of the first edition of the Certificate that took place in 2022. The rest of the case study proceeds as follows. Section 2 discusses the rationale and key drivers of integrating climate change in business schools' curricula. Section 3 provides an overview of climate change education in business schools based on a study conducted by

HEC Paris students in 2019-2020. Section 4 presents the Climate and Business Certificate, a flagship program at HEC Paris launched in 2022. Section 5 concludes.

2. Climate change and business schools

2.1. Growing importance of climate change education

Climate change education is crucial because it raises awareness of the problem at hand and promotes local and global action towards finding sustainable solutions. By understanding the science behind climate change, we can develop a deeper appreciation for the environmental and social implications of human activity and the importance of reducing GHG emissions and other environmental impacts, as well as finding more sustainable economic models. Climate change education can also help individuals become more environmentally responsible by inspiring them to make changes in their daily lives, implement sustainable solutions in their jobs, and actively push their elected representatives to take more ambitious climate action.

Furthermore, climate change education can inspire students to pursue careers in fields related to climate change including in science, technology, engineering, policy, and finance. With the increasing need for innovative solutions to address climate change, professionals in these fields have an essential role to play in developing and implementing sustainable practices. Students can acquire the necessary skills and knowledge to become leaders in the development of clean energy technologies, sustainable agriculture, and ecosystem management, among other areas.

Finally, climate change education can promote social justice and equity by highlighting the disproportionate impact of climate change on marginalized communities. By teaching about the social and economic inequalities that contribute to environmental degradation and the unequal distribution of its effects, we can inspire students to become advocates for environmental justice and to promote policies and practices that foster equity.

2.2. The role of businesses in tackling climate change

The United Nations Convention Framework on Climate Change (UN, 1992) and the Paris Agreement (UNFCCC, 2015) mainly focus on sovereign states as the main drivers of climate change mitigation and adaptation efforts. At the same time, some of the largest corporations generate GHG emission levels comparable to those of sovereign states (Heede, 2014). Indeed,

in 2015, 71% of global GHG emissions could be attributed to 100 companies, while 51% of emissions could be attributed to only 25 using Scope 3 accounting (CDP, 2017). Moreover, over half of the current level of global warming since the industrial revolution can be tracked to GHG emissions of just 90 companies (Ekwurzel et al. 2017).

Corporations not only have an impact on the climate but are also affected by climate change. In the early 2000s, companies slowly started recognizing both the current and potential future impacts of climate change on their own operations (Porter and Reinhardt, 2007). More recently, the 215 largest global companies reported USD 1 trillion assets at risk with up to USD 250 billion in potential losses due to asset write-offs resulting from climate change impacts (CDP, 2019). Moreover, businesses are also starting to be held accountable publicly. Fossil fuel divestment is one of the fastest growing movements related climate change in the financial sector; in less than five years, the movement has secured USD 8 trillion worth of divestments from the fossil fuel industry (McKibben, 2018). Moreover, large companies have been targeted by climate change litigation, such as, for example, the German utility RWE by a Peruvian mountain dweller claiming damages to his property from a potential outburst of a glacial lake swollen by glacial melt, proportional to the share of RWE in global GHG emissions (Amelang, 2022).

At the same time, climate change offers companies massive new business opportunities, even if estimates of their actual size vary. For example, according to the Global Commission on the Economy and Climate (2018), a shift to a low-carbon growth path offers a potential for economic benefits (accruing to both public and private sectors) of USD 26 trillion by 2030 compared to business-as-usual. The Carbon Disclosure Project (2019) estimates business opportunities related to climate change at USD 2.1 trillion, while the cost of exploring these opportunities is estimated at USD 311 billion. It is therefore in the interest of companies to explore these opportunities and tap into the new emerging markets for clean technologies, products and services.

2.3. Rationale for mainstreaming climate change in business schools

The increasing role of companies in climate change mitigation and adaptation begs the question of how well current and future business leaders are prepared for the task – not least through education in business schools. About a third of the CEOs of the world's 500 largest listed

companies by market capitalization hold an MBA degree and 98 of these 500 CEOs hold degrees from one of the Top-100 business schools (Palin and Birkett, 2016). Business practitioners apply knowledge acquired in business schools after they graduate and throughout their professional lives significantly affecting decision-making in the companies they manage (Jung and Shin, 2019). Moreover, higher levels of business education of CEOs – Master and MBA degrees – are associated with better corporate social responsibility (CSR) performance of the firms that they lead (Huang, 2013).

Business schools therefore must urgently consider climate change education as an important part of their core curriculum in order to prepare students to engage in environmentally and socially responsible business practices. Indeed, business school graduates need to possess an understanding of how firms can improve their sustainability performance, and how they can employ innovative strategies to reduce the environmental harms associated with their business operations. This would enable graduates to successfully address climate change and other environmental challenges when managing organizations. Moreover, it is also important for students to be aware of increasingly important legal, financial, and environmental regulations concerning climate change. Students must be cognizant of their obligations and duties as responsible citizens and managers and be trained to develop creative solutions to tackle climate change. Finally, climate change education in business schools can contribute to better-informed investment and operational decision-making by current and future business leaders, enhancing climate change mitigation and adaptation efforts by companies.

Better integrating climate change education in the curricula of business schools is therefore an important component of raising awareness and building capacity for well-informed decision making by business practitioners (Adams et al. 2011). Integrating climate change in business education is also important for business schools themselves, as there is a growing interest in the topic from students. A survey of 3711 students from 29 business schools across 25 countries and five continents undertaken in 2012-2015 showed that 44% of them were willing to accept a lower salary if it meant working for a “greener” company (Franceschini and Cort, 2015), which points to increasing demand for related education.

3. State of the art of climate change education in business schools

3.1. Building momentum on climate change education in business schools

Despite clear scientific evidence on climate change, at least until the end of the 2000s, the climate change topic has generally not been very well integrated in business education (Patenaude, 2011). In that period, management journals also have failed to integrate this topic in their publications (Goodall, 2008). A study conducted in 2014 found that only 2 of 13 selected business schools in the US offered specialized climate change classes, although 9 of 13 schools had broader academic centers and degrees focused on climate, energy or sustainability (National Research Council, 2014).

A recent study (AMBA and BGA, 2021), which included a survey of 597 senior leaders from business schools worldwide, revealed that almost 90% of the participants believe that their respective Business Schools bear some level of responsibility in addressing climate change. However, only a mere 3% of the respondents consider their business schools' current efforts in tackling climate change as 'excellent'. This clearly indicates that leaders recognize the need for substantial improvements in their institutions.

Business schools can contribute to climate action through both education and engaging their communities, e.g., alumni (Weybrecht 2020). Moreover, business schools possess valuable expertise in various domains, such as organizational transformation, performance measurement, operations, marketing, leadership, and governance, making them significant contributors to the battle against climate change (Galdon et al., 2022). Recognizing their potential impact, eight leading European business schools including HEC Paris joined forces to launch the Business Schools for Climate Leadership (BS4CL) initiative aiming to foster a community of responsible and knowledgeable business leaders through collaborative efforts and shared insights. Several other collaborative initiatives among business schools have been launched recently to promote climate action (Symonds, 2023).

Overall, the discussion surrounding climate change in business schools has undergone a significant transformation. Previously, climate change education was limited to small groups of passionate sustainability students. In the past two years, however, widespread support has emerged from influential figures, such as the deans of eight prominent European business

schools, who have made public commitments to foster climate research and education. The Deans of the eight BS4CL members said: “We mean to build the foundations with which businesses can lead global action to collaborate across sectors to limit climate change and to promote meaningful and visible progress” (Ethier 2021).

3.2. Quantifying climate change education in business schools

In 2019-2020, a group of HEC Paris sustainability students – Adriana Pineiro-Coen, Amanda Sørnum, Brinda Kulkarni, Sephra Abraham – conducted a review of climate change education in Top-100 business schools under the supervision of Adjunct Lecturer Igor Shishlov.¹ The Top-100 business schools were selected for review according to the Financial Times ranking of 2019 (Financial Times, 2019). Business schools listed and ranked by the Financial Times are accredited according to the Association to Advance Collegiate Schools of Business (AACSB) or the European Quality Improvement System (EQUIS) and have programs that have been running for at least four years. The methodology to assess the integration of climate change education in business schools built upon the methodology used by the National Research Council (2014) for a study on climate change education in 13 business schools in the USA.

The authors searched for publicly available information from the websites of Top-100 business schools using the following keywords: Carbon, Climate Change, Energy, and Environment. They then used this data to calculate the climate change education score (CCE score) for each business school by attributing one point for each climate change course, one point for each climate change or environmental specialization program and one point for each climate change or environmental academic center. General sustainability and ESG courses, programs, and academic centers were not considered as these may not necessarily address the topic of climate change, or only at the margin.

3.3. Snapshot of climate change education in Top-100 business schools

In 2020, the Top-100 business schools offered a total of 30 core and 55 elective climate change courses, 19 climate change or environmental programs and 17 climate change or environmental

¹ The full study is available upon request.

academic centers (see Annex for the overall ranking of business schools according to their CCE scores). Surprisingly, two-thirds of the Top-100 business schools did not offer any dedicated climate change courses, programs or academic centers. Of the business schools offering climate change education, only 13 schools got a CCE score of 3 or higher. Only three of the Top-10 FT schools made it to the Top-10 CCE ranking and another two to the TOP-15 CCE ranking. Five of the Top-10 FT schools got a CCE score of zero. Finally, we highlight one business school that was a significant outlier in our study – Yale University – offering 25 climate change courses, three specialized programs and one dedicated academic center on environment.

The study did not find any meaningful correlation between the CCE ranking and the FT ranking. First, this may point to the fact that climate change education is not yet used as a criterion for the overall business school ranking. Second, this may point to the fact that business schools themselves do not see climate change education as their competitive edge, which leads to many top business schools not sufficiently integrating climate change into their curricula. In addition, the study did not manage to identify any correlation of the countries CCE scores and the level of climate policy ambition of these countries, suggesting that this factor does not influence the climate change mainstreaming in the curricula of business schools.

While some of the top business schools around the world have already started integrating climate change in their curricula through core and elective courses, specialization programs and dedicated academic centers, the level of this integration varies considerably among Top-100 business schools. Given the apparent undersupply of climate change education amongst the leading business schools, HEC Paris decided to spearhead these efforts by integrating climate change considerations into various core and elective courses, culminating in the launch of a flagship five-week program – the Climate and Business Certificate – in 2022. The next section details the process of development and the content of the program.

4. Climate and Business Certificate at HEC Paris

4.1. Climate change education at HEC Paris

Responding to the growing imperative of climate change education and relatively slow progress by the leading business schools, HEC Paris decided to speed up mainstreaming climate change and broader sustainability topics in its teaching and research activities. The factors behind this strategic move included both internal drivers – including leadership from the school’s management, trailblazing work by the Society and Organizations Institute, and advocacy of professors and staff who acted as internal climate activists – and external drivers – demand from students and their future employers, European and international climate policy developments, increasing adoption of Net Zero emissions targets by countries and companies, etc.

This strategic shift could be observed in both research and teaching activities of the school. Indeed, between 2020 and 2022, 38% of all articles published by HEC Paris faculty members were related to ESG topics. In the same period, ESG-related content represented 15%, 27% and 33% of total course hours in Masters, MBA and EMBA programs respectively. Moreover, 50% of published case studies since 2020 are on ESG topics, including case studies on Alenvi on social impact, Best Buy on purposeful leadership, Bouygues on Sustainable cities, Stanley Black & Decker and Camif on purpose, Colas on carbon accounting, Danone on social innovation, Renault on mobility solutions, Schneider Electric on solar home systems, Veolia on community water distribution, to name only a few.

In addition to the above developments, in 2022, HEC Paris created the Climate and Business Certificate under the leadership of the Society and Organizations Institute, a five-week flagship program aimed at equipping Masters, MBA and EMBA students with knowledge and tools necessary for navigating the climate transition from both business and societal perspectives. Certificates at HEC Paris are a set of interdisciplinary courses corresponding to approximately 100 contact hours as well as business projects and other types of field work related to a given sector. Until 2022, HEC Paris offered eight Certificates on topics ranging from data science to luxury. Climate change issues were indirectly tackled in the Energy and Finance Certificate and Inclusive and Social Business Certificate, but no dedicated climate Certificate was available.

4.2. Development of the Climate and Business Certificate at HEC Paris

The decision to create a dedicated Climate and Business Certificate was taken in 2021 following a series of discussions between the management of school, representatives of the Society and Organizations Institute, and professors interested in spearheading the topic. Daniel Halbheer – Associate Professor of Marketing, holder of the FII Institute chair on “Business Models for the Circular Economy”, and Academic Director of the Climate and Earth Center within the Society and Organizations Institute at HEC Paris – and Igor Shishlov – Adjunct Lecturer on Climate Change Economics at HEC Paris and Head of Climate Finance at Perspectives Climate Group – were appointed Co-Directors of the Climate and Business Certificate and were tasked to develop the curriculum and prepare the launch of the first edition of the program in May 2022.

The Certificate content was then developed through a participatory process that included several iterations of the program and involved discussions with and feedback from various internal and external stakeholders including:

- The Dean of HEC Paris;
- Representatives from the Society and Organizations Institute;
- Professors involved in sustainability-related courses and research;
- Corporate partners interested in the climate change topic;
- Students from two associations dedicated to sustainability.

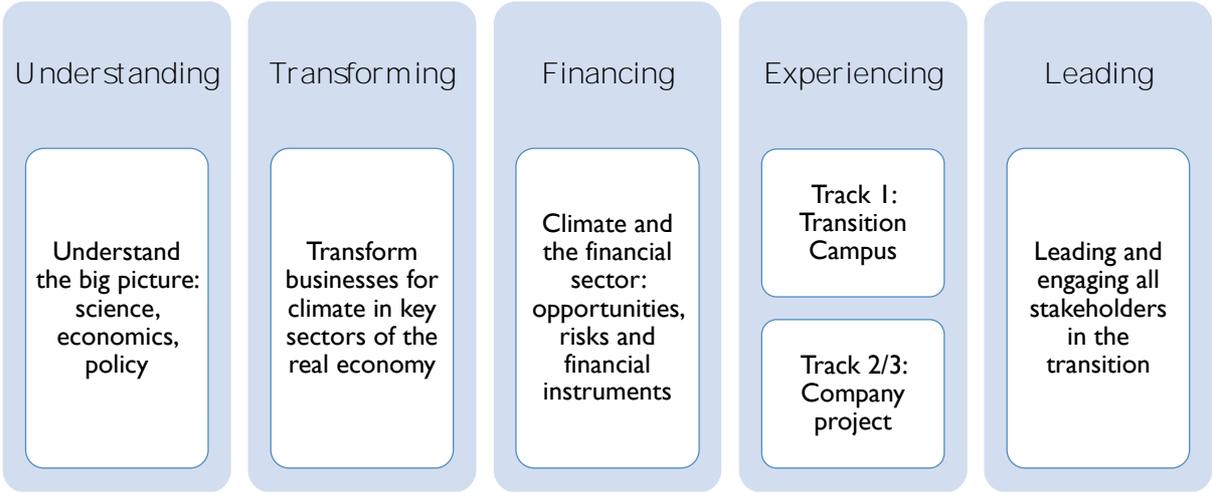
Once the program outline was ready, Daniel Halbheer and Igor Shishlov have identified experts from academia, NGOs, policy as well as the private sector to deliver high-quality and engaging content on each of the key topics. Throughout this process, they strived for a balance between academic rigor and practicality of suggested tools and solutions. The Certificate thus offers a diversity of speakers and guest lecturers who bring both specialized expertise and different perspectives on climate change topics and corporate sustainability. This is a major advantage as it effectively broadens the reach and scope of tools available to participants for effective climate action. Lectures, discussions, and case studies presented by industry thought leaders, academics, policy makers and representatives of NGOs give participants a broad – yet comprehensive – overview of the different issues affecting corporate sustainability and understanding why and how businesses should take climate change into consideration when

making strategic and operational decisions. Funding for the certificate was provided by the Society and Organizations Institute and the FII Institute.

4.3. Overview of the program

The main objective of the Climate and Business Certificate program is to prepare students for navigating the complexities of climate change and decarbonization from a business and societal perspective. The Certificate offers a five-week program focused on understanding and experiencing the path toward Net Zero GHG emissions. Each week focuses on one of the five building blocks – understanding, decarbonizing, financing, experiencing and leading – that together form the basis for becoming agents of change to limit the temperature rise to 1.5°C as recommended by climate science Figure 1 provides an overview of the Certificate.

Figure 1. Five building blocks of the Climate and Business Certificate at HEC Paris.



The Certificate employs a combination of learning methods, where each week consists of three or four days of classes and case studies, as well as one day of individual and group assignments. Classes are delivered by high-profile inspirational speakers from academia, companies, financial institutions, governments, and NGOs. It is also an interactive program that employs social network tools such as LinkedIn and Twitter to keep students engaged and help them exchange ideas.

The main learning objectives of the Certificate are as follows. By the end of the Certificate, students should be able to:

- Understand the Net Zero transition stakes on macro (planet, society, economy) and micro (company, individual) levels;
- Analyze a company's GHG emissions profile and design short- and long-term decarbonization strategies in different sectors of the economy;
- Understand the key financial aspects of the Net Zero transition for businesses and financial institutions including emerging risks and opportunities;
- Engage and lead various stakeholders on climate change topics and inspire them to contribute to the low carbon and climate resilient development.

The program thus engages students on three learning dimensions, thus supporting Action for Climate Empowerment:

- Cognitive: Transferring knowledge on climate science, policy, economics and finance that are essential for students to become agents of change throughout their career.
- Social and emotional: Developing necessary soft skills to tackle business problems related to climate change through group projects, social media assignments, and presentations at the end of the program. In addition, students participated in various exercises on the Transition Campus that allowed them to better connect with the cause, for example, through imagining the world in 2100 and looking back at what has been done to solve the climate crisis.
- Action and behavioral: Developing action competencies both at individual level – particularly through the “Transition Campus” during week four of the program, where students experience personal behavioral changes – and collective level, e.g., through the practical hands-on experience with the company project.

Students' progress is evaluated as follows:

- Weekly individual assignments;
- Group project that consists of preparing a decarbonization plan for a company or sector;
- Individual or group assignments given by lecturers during their respective sessions.

4.4. Content of the program

The first week of the Certificate focuses on understanding the big picture related to climate change and the ecological transition. It starts with a thought-provoking discussion on the

relationship between environment and society, followed by the introduction of planetary boundaries before zooming into the climate change problem. It then establishes a solid understanding of climate change science and transformations required to achieve Net Zero emissions. This is then followed by a discussion about geopolitics of climate change and the evolution of the international climate frameworks. Finally, students dive into domestic climate policies that affect businesses in all sectors of the economy with a focus on the EU climate and energy policies as the main case study.

The second week of the Certificate focuses on measuring and reducing GHG emissions by companies and transforming the key sectors of the economy. First, students are exposed to the existing approaches to GHG accounting within a company (including Scope 1, 2, and 3 emissions) and the process of setting science-based targets (SBTs) to reduce its climate impact. Second, students learn about the marginal abatement cost curves (MACCs), how to identify and implement decarbonization strategies within a company, and how to develop circular economy solutions. Finally, students investigate several case studies in key sectors of the economy – such as energy and transport – to learn how decarbonization strategies are developed and implemented in the real world.

The third week of the Certificate focuses on the financial aspects of the Net Zero transition. First, students explore the climate finance landscape to understand financial needs, sources of finance, climate finance instruments and current climate finance flows. Second, they learn about the evolving financial regulations that are increasingly integrating climate considerations and influence investment decisions. Finally, students are presented with several case studies on climate action in different types of financial institutions, including private and public banks, investors, and insurance companies.

The fourth week of the Certificate offers students an opportunity to experience the transition hands on through one of the possible tracks. The first option is to spend three days on the [Transition Campus](#) to personally experience behavioral transformations and challenge the conventional wisdom about the economy, society, and the environment. The second option is to do a practical real-world project, where students work closely with representatives of a company to develop actionable decarbonization solutions.

The final week of the Certificate focuses on how to engage and lead all stakeholders in the Net Zero transition and in the broader sustainability journey. This is achieved through a series of round tables with businesses, policymakers, and civil society. Students then present their final group projects to a jury. Finally, the Certificate concludes with a discussion on career opportunities in the climate change field and some inspirational testimonials from HEC Paris alumni who currently work on climate change solutions or broader sustainability topics.

4.5. Evaluation of the first edition of the Certificate

The first edition of the Climate and Business Certificate at HEC Paris took place in May 2022 with a total of 55 participants including French and international last-year Master, MBA and EMBA students. The diversity of participants allowed for rich discussions in the classroom as well as fruitful collaborations during group assignments. The program content was tailored to ensure that it speaks to a wide variety of backgrounds through speakers from different industries and types of organizations. Given that the Certificate was the final course before graduation for all participants, it was important to ensure that it equips the students with practical tools that they can implement on the job after graduation, which was achieved through inviting several practitioners that shared their toolboxes (e.g., carbon accounting, life cycle analysis and climate risk assessment).

Following the first edition of the Certificate, participants were asked to respond to the evaluation survey in order to gather their feedback, identify strengths and weaknesses of various speakers, as well as the participants' level of interest in different topics that were offered. Overall, the Climate and Business Certificate received an evaluation score of 4.32/5.00 (see Figure 2 below), which was the third highest score among the nine Certificates that were offered by HEC Paris that year.

Figure 2. Overall evaluation of the first edition of the Climate and Business Certificate at HEC Paris.

GEM2CEFLB/2122-S2-ALL - CERTIFICATE - CLIMATE AND BUSINESS / GENERAL General average : 4.32

1. Global assessment of the course (HALBHEER, Daniel)

Average	1 - Very unsatisfactory	2 (2)	3 (3)	4 (4)	5 - Excellent (5)	Answers
4.4	0%	0%	5%	50%	45%	40/55

2. Content (HALBHEER, Daniel)

Average	1 - Very unsatisfactory	2 (2)	3 (3)	4 (4)	5 - Excellent (5)	Answers
4.35	0%	0%	8%	50%	43%	40/55

3. Teaching qualities (HALBHEER, Daniel)

Average	1 - Very unsatisfactory	2 (2)	3 (3)	4 (4)	5 - Excellent (5)	Answers
4.3	0%	3%	5%	53%	40%	40/55

4. Quality of the teaching material used (HALBHEER, Daniel)

Average	1 - Very unsatisfactory	2 (2)	3 (3)	4 (4)	5 - Excellent (5)	Answers
4.25	0%	0%	10%	55%	35%	40/55

Besides the overall evaluation, each speaker of the program was evaluated separately including scoring across the four assessment dimensions – global assessment, content, teaching qualities, quality of teaching material – as well as qualitative feedback (strengths and weaknesses of each session). This allowed for the collection of valuable feedback that was considered when developing the second edition of the Certificate in 2023. One of the main points for improvement suggested by the participants of the first edition, was to go beyond the Net Zero transition in Europe and incorporate the considerations for businesses in developing countries. This was addressed in the second edition of the Certificate by incorporating sessions on the energy transition in the Global South. Another suggestion was to integrate the topic of biodiversity and its links with climate change, which was also implemented in a dedicated session in 2023.

In addition to overwhelmingly positive evaluations by the participants, the Climate and Business Certificate was recognized by the HEC Foundation that awarded Daniel Halbheer and Igor Shishlov with a Bruno Roux de Bézieux Prize for the innovative educational initiative (Plague 2023). “Pedagogy has evolved in unheard ways these past years,” said jury member Anne Michaut, HEC’s Associate Dean (Education Track and Pedagogy). “These rewards recognize the importance of making our courses evolve, thus preparing students to navigate the complexities of the world they are entering.” (HEC, 2023).

5. Conclusions

Reaching a development pathway consistent with the objectives of the Paris Agreement will require significant mobilization of resources – mainly from the private sector. In this light, it is of utmost importance that business leaders are fully aware of the climate change challenge and are able to assess risks and opportunities arising from the Net Zero transition. This case study demonstrated that business schools play an important role in this process by educating current and future business leaders. However, it also demonstrated that most business schools are lagging behind when it comes to climate change education.

Responding to these challenges, HEC Paris embarked on a journey to mainstream climate change education throughout its curriculum, including the launch of the Climate and Business Certificate under the leadership of the Society and Organizations Institute in 2022. The case study demonstrated the impact of the Certificate on several levels. First, it demonstrated how a leading business school can integrate climate change education into its curriculum through a participatory process while creating an innovative educational offering for students. It thus showed how a business school can help shape future leaders that are able to fully integrate climate change considerations in their careers – whether or not they are directly related to the low-carbon and climate resilient transition. Second, the case study demonstrated how integrating climate change education in a business school’s curriculum can help mainstream climate change topics in the business school itself. Indeed, the highly participatory process of setting up the Climate and Business Certificate at HEC Paris resulted in several spin-off projects including short courses, workshops and webinars that helped engage various stakeholders inside and outside the school in climate action. Finally, the case study demonstrated how integrating climate change education into business schools creates momentum for collaboration and exchange of experiences and best practices, such as, for example, through the Business Schools for Climate Leadership (BS4CL) initiative.

The case study offers several lessons for business schools that are willing to integrate climate change education in their curricula. First, it demonstrated the importance of political momentum and high-level engagement in the process, ideally spearheaded by the commitment of the Dean of the school as well as the engagement of internal “climate champions,” for example, dedicated professors who are willing to go an extra mile to advance climate change

education in their school. Second, the case study demonstrated the importance of the participatory process in the development of climate change education programs, i.e., including consultations with professors, students, and corporate partners to ensure support and “buy-in” of all relevant stakeholders. Third, it demonstrated the benefits of collecting formal and informal feedback from participants of the climate change education programs in order to enable constant improvement and relevance of the curriculum. Finally, the case study showed that climate change education programs must be rooted in the best available science and involve a diversity of speakers to balance theory and practice, as well as a diversity of learning methods, such as lectures, case studies, group and individual assignments.

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7. Annex: Climate Change Education in Top-100 business schools

The ranking below is based on public information that was available in 2019.

Business school	Country	FT rank	CCE score	CCE rank
Yale School of Management	US	11	29	1
Imperial College Business School	UK	40	14	2
University of Edinburgh Business School	UK	88	9	3
Macquarie Graduate School of Management	Australia	74	6	4
Stanford Graduate School of Business	US	1	4	5-8
University of Pennsylvania: Wharton	US	4	4	5-8
University of Hong Kong	China	41	4	5-8
University of Texas at Dallas: Jindal	US	97	4	5-8
University of Chicago: Booth	US	7	3	9-13
Esade Business School	Spain	21	3	9-13
Fudan University School of Management	China	34	3	9-13
Michigan State University: Broad	US	65	3	9-13
AGSM at UNSW Business School	Australia	70	3	9-13
Harvard Business School	US	2	2	14-23
MIT: Sloan	US	8	2	14-23
University of Cambridge: Judge	UK	16	2	14-23
HEC Paris	France	19	2	14-23
IE Business School	Spain	31	2	14-23
Durham University Business School	UK	45	2	14-23
Boston University: Questrom	US	68	2	14-23
University College Dublin: Smurfit	Ireland	89	2	14-23
George Washington University	US	90	2	14-23
Grenoble Ecole de Management	France	98	2	14-23
Dartmouth College	US	15	1	24-35
Duke University: Fuqua	US	20	1	24-35
UCLA: Anderson	US	26	1	24-35
University of Michigan: Ross	US	28	1	24-35
Georgetown University: McDonough	US	29	1	24-35
Nanyang Business School, NTU Singapore	Singapore	30	1	24-35
Indian Institute of Management Calcutta	India	50	1	24-35
University of North Carolina: Kenan-Flagler	US	52	1	24-35
Rotterdam School of Management	Netherlands	55	1	24-35
Georgia Institute of Technology: Scheller	US	60	1	24-35
University of St Gallen	Switzerland	69	1	24-35
Western University: Ivey	Canada	94	1	24-35

Insead	France / Singapore	3	0	NA
Ceibs	China	5	0	NA
London Business School	UK	6	0	NA
Columbia Business School	US	9	0	NA
University of California at Berkely: Haas	US	10	0	NA
Iese Business School	Spain	12	0	NA
University of Oxford: Saïd	UK	13	0	NA
Northwestern University: Kellogg	US	14	0	NA
National University of Singapore Business School	Singapore	17	0	NA
HKUST Business School	China	18	0	NA
IMD Business School	Switzerland	22	0	NA
University of Virginia: Darden	US	23	0	NA
Indian School of Business	India	24	0	NA
New York University: Stern	US	25	0	NA
Cornell University: Johnson	US	27	0	NA
SDA Bocconi	Italy	32	0	NA
Indian Institute of Management Bangalore	India	33	0	NA
Carnegie Mellon: Tepper	US	35	0	NA
Warwick Business School	UK	36	0	NA
University of Texas at Austin: McCombs	US	37	0	NA
Emory University: Goizueta	US	38	0	NA
University of Florida: Warrington	US	39	0	NA
Sungkyunkwan University GSB	South Korea	42	0	NA
Singapore Management University: Lee Kong Chian	Singapore	43	0	NA
Indiana University: Kelley	US	44	0	NA
University of Southern California: Marshall	US	46	0	NA
Indian Institute of Management Ahmedabad	India	47	0	NA
University of California at Irvine: Merage	US	48	0	NA
University of Washington: Foster	US	49	0	NA
Shanghai Jiao Tong University: Antai	China	51	0	NA
Vanderbilt University: Owen	US	53	0	NA
Washington University: Olin	US	54	0	NA
Rice University: Jones	US	56	0	NA
CUHK Business School	China	57	0	NA
University of Notre Dame: Mendoza	US	58	0	NA
Alliance Manchester Business School	UK	59	0	NA
Melbourne Business School	Australia	61	0	NA
Arizona State University: Carey	US	62	0	NA
Pennsylvania State University: Smeal	US	63	0	NA
City, University of London: Cass	UK	64	0	NA

Babson College: Olin	US	66	0	NA
Boston College: Carroll	US	67	0	NA
WHU – Otto Beisheim School of Management	Germany	71	0	NA
University of Maryland: Smith	US	72	0	NA
University of Pittsburgh: Katz	US	73	0	NA
Purdue University: Krannert	US	75	0	NA
Cranfield School of Management	UK	76	0	NA
Mannheim Business School	Germany	77	0	NA
Brigham Young University: Marriott	US	78	0	NA
ESMT Berlin	Germany	79	0	NA
EMLyon Business School	France	80	0	NA
Wisconsin School of Business	US	81	0	NA
Carlson School of Management	US	82	0	NA
University of Rochester: Simon Business School	US	83	0	NA
Ohio State University: Fisher	US	84	0	NA
University of Toronto: Rotman	Canada	85	0	NA
The Lisbon MBA	Portugal	86	0	NA
McGill University: Desautels	Canada	87	0	NA
Lancaster University Management School	UK	91	0	NA
SMU: Cox	US	92	0	NA
Essec Business School	France	93	0	NA
Fordham University: Gabelli	US	95	0	NA
Incae Business School	Costa Rica / Nicaragua	96	0	NA
Texas A & M University: Mays	US	99	0	NA
William & Mary: Mason	US	100	0	NA