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Perceived Student Workload in English-Medium Instruction: Evidence from a Large-Scale Study in Business Education

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Abstract

This study examines differences in perceived academic workload between students enrolled in English-Medium Instruction (EMI) and non-EMI programs, contributing to the broader discussion on student experience in higher education. Drawing on a large sample of 11,427 course evaluations from a Business Administration degree at a Spanish university (2016–2019), we compare self-reported workload scores across groups. Results indicate that EMI students report slightly higher workloads, particularly in the first year and in subject areas such as Economics and Quantitative Methods. However, these differences diminish in subsequent years, and effect sizes are generally small or negligible. The findings suggest that while EMI students initially invest more effort, likely due to adapting to instruction in a non-native language, this additional workload is temporary. These results reinforce the viability of EMI programs and highlight the value of targeted first-year support to optimize the student learning experience.

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Practitioner Notes

1. Where English entry standards are rigorous, EMI students' workload aligns with that of non-EMI peers, with only small gaps at the start of the degree.
2. When admitting students to EMI pathways, institutions should diagnose academic English on entry and intervene early to reduce overload.
3. When designing EMI curricula, support should be concentrated in the first year, where EMI students' perceived workload peaks relative to non-EMI peers.
4. Program leaders should monitor workload by discipline and avoid one-size-fits-all solutions; patterns differ across fields.
5. When sequencing first-year units, educators should stage assessment and study demands so that early effort is spread and sustainable across semesters.

Keywords

English-medium instruction, higher education, student workload.

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Introduction

In today's globalized labour market, employers seek professionals who combine solid technical expertise with strong international and intercultural competencies (Caligiuri & Tarique, 2012; Pinna Pintor & Premazzi, 2024; Rehg et al., 2012; Schworm et al., 2017; World Economic Forum, 2025). However, as noted by the British Council (2013, p. 3), "policy makers and education providers could do more to contribute to the development of a workforce with the necessary intercultural skills." In response to these demands, higher education (HE) institutions have increasingly prioritized internationalization as a strategic goal. To this end, a range of initiatives has been implemented. These include mobility programs for students, faculty, and staff (MECD, 2016; Yang et al., 2018; Zhang, 2018). Other measures involve institutional strategies such as Internationalization at Home (IaH) (Li, 2022; Soulé et al., 2024) and Internationalization of the Curriculum (IoC) (Leask, 2009; Whitsed et al., 2024; Zou & Timmermans, 2025).

The process of internationalization in higher education necessitates the adoption of a common language of instruction. English, through English-medium instruction (EMI), has emerged as the dominant linguistic vehicle, becoming the standard in a wide range of academic programs across the globe (Bowles & Murphy, 2020). Universities worldwide have experienced a significant and sustained increase in the number of EMI courses and programs (Bowles & Murphy, 2020; Broggini & Costa, 2017; Gülle, 2024; Hultgren, 2014; Karabay & Durrani, 2024; Macaro et al., 2018). Early estimates indicated that the number of English-taught programs in non-English-speaking European countries increased more than tenfold between 2001 and 2013 (Wächter & Maiworm, 2014), although the authors cautioned that this apparent growth may have been inflated by undercounting in the earliest surveys. More recent evidence confirms this expansion: the percentage of higher education institutions offering EMI programs increased from 26.9% in 2013 to 48% in 2023 (Wingrove et al., 2026). The expansion of EMI has also been documented in other geographical areas, such as Latin America (Jaramillo & de Wit, 2011; Martínez, 2016) and Asia (Bolton et al., 2023). The latter region currently accounts for more than 20,000 English-taught programs (British Council & Studyportals, 2025, p. 13), and, as Walkinshaw et al. (2017, p. 2) note, EMI "is becoming a 'new normal', and a key site for this change is higher education, nowhere more so than in the Asia-Pacific."

This rapid and geographically widespread expansion highlights the growing relevance of understanding the implications of EMI, as its adoption brings a wide range of opportunities and challenges for students, faculty, and institutions. Among these challenges is its potential impact on student workload. In this study, workload is understood as the additional hours, effort, or independent work students must undertake to achieve their academic goals. This includes time spent studying, reading course materials, reviewing lectures, participating in autonomous or group learning, seeking external support, and taking private lessons, among other activities.

The central research question of this paper is whether students enrolled in EMI programs perceive a heavier workload than their peers in non-EMI programs. To address this, we compare perceived workload across EMI and non-EMI student groups, overall, by subject area, and across the four academic years of a business administration degree at a Spanish university. The data were drawn from teaching evaluation surveys completed between 2016 and 2019 by two groups of students: those studying in English (EMI group, 2,870 responses) and those studying in Spanish (non-EMI group, 8,557 responses).

To contextualize these findings and situate them within existing research, this paper first reviews the relevant literature on EMI and its implications for student workload. It then outlines the methodology employed in this study, followed by a presentation and discussion of the results. The final section concludes with a summary of the main insights and suggestions for future research.

Literature

Internationalization of Higher Education

HE institutions today face multiple and evolving challenges driven by the diverse expectations of stakeholders, including students, their families, employers, and society at large. These expectations encompass a wide range of goals: enhancing teaching and research quality, equipping students with skills for global environments, improving employability, and contributing meaningfully to society (Lauridsen & Gregersen-Hermans, 2021).

In response, the internationalization of HE has emerged as a strategic priority for many institutions, serving as a vehicle to meet these demands. Beyond pedagogical and societal objectives, internationalization also aims to strengthen institutional reputation, increase visibility in global rankings, improve financial sustainability, and attract talented students, faculty, and staff (European Commission, 2013).

Although the concept of the internationalization of HE is inherently broad and multifaceted, with diffuse boundaries (Altbach & Knight, 2007; Green & Whitsed, 2015; Lauridsen & Gregersen-Hermans, 2021), one widely accepted definition frames it as follows:

> the intentional process of integrating an international, intercultural or global dimension into the purpose, functions, and delivery of post-secondary education, in order to enhance the quality of education and research for all students and staff, and to make a meaningful contribution to society (de Wit et al., 2015, p. 29).

To operationalize this vision, internationalization strategies typically rely on strategic partnerships for institutional collaboration, mobility initiatives for students, faculty, and staff, IaH, and IoC. Central to this approach is the recruitment of students from diverse cultural and national backgrounds. This plays a crucial role in fostering global learning environments (Ritzen, 2004).

Strategic partnerships between institutions are the starting point for international cooperation and can be developed in many different ways, with the promotion of mobility initiatives being the most commonly adopted for many years. Mobility concerns students, professors, and staff who can go abroad to an international partner institution. The purposes include learning, teaching, and sharing knowledge and best practices (European Commission, 2025; Mills, 2022; Shen et al., 2022; Yang & Farley, 2019; Zhang, 2018). Despite the availability of mobility programs such as ERASMUS, only around 9% of European university students have studied abroad (Eurostat, 2024). This gap is covered by initiatives such as IaH and IoC.

A broad definition of IaH was proposed by Nilsson (2003, p. 31), who described it as “any internationally related activity with the exception of outbound student mobility.” Although the concept originated in Europe, it has since gained global traction (Beelen, 2007). While initially perceived as an alternative (or even a counterpoint) to physical mobility, IaH is now understood as a complementary dimension within broader internationalization strategies whose main benefit

is intercultural sensitivity (Soulé et al., 2024). Beelen and Jones (2015, p. 76) refined the definition by emphasizing its intentional nature: “Internationalization at Home is the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments.” According to Wächter (2003, p. 6), IaH rests on two key pillars: first, a conceptualization of internationalization that extends beyond student mobility; and second, a strong emphasis on teaching and learning in culturally diverse settings. IaH not only requires the participation of universities, but also the involvement of countries to design and carry out reforms in their higher education systems (Li, 2022).

The implementation of IaH has been the subject of sustained scholarly attention and is closely linked to the concept of IoC (Beelen, 2007). Certainly, IaH can be effectively implemented through online exchanges, or on campus by embedding international and intercultural perspectives into the curriculum (Soulé et al., 2024). IoC has been defined as “the incorporation of an international and intercultural dimension into the content of the curriculum as well as the teaching and learning arrangements and support services of a program of study” (Leask, 2009, p. 209). In a later contribution, Leask (2013) conceptualizes IoC as a cyclical process comprising five stages: review and reflection, imagining, revision and planning, action, and evaluation. While institutional policies are necessary to support IoC, they are not sufficient on their own. Effective implementation requires identifying the drivers and barriers to faculty engagement, as instructors are ultimately responsible for embedding internationalization into teaching practice (Leask, 2013).

Main concerns about EMI in Higher Education

The internationalization of higher education is closely linked to the processes of *Englishization* and the adoption of EMI (Dafouz & Smit, 2020; Lasagabaster, 2021). Implementing EMI programs offers numerous opportunities for students. It enhances their English language proficiency (Chang, 2010; Gülle, 2024; Lai & Idris, 2025; Rose et al., 2020; Tatzl, 2011). It also prepares them to participate in global academic and labor markets (British Council & Studyportals, 2024; Doiz et al., 2011; Kim & Shin, 2014; Lai & Idris, 2025) and fosters the development of intercultural competencies and a sense of global citizenship. At the institutional level, EMI contributes to increased international visibility (Dafouz, 2018). It also supports the effective integration and inclusion of international students in the university community (Haines et al., 2020), facilitates the attraction of foreign talent (Bowles & Murphy, 2020), and strengthens participation in global academic networks, given that English is widely regarded as “the world language of academia” (Mauranen et al., 2010, p. 183).

However, there are also critical voices, as “key stakeholders have serious concerns regarding the introduction and implementation of EMI despite sometimes recognizing its inevitability” (Macaro et al., 2018, p. 36). Among the most frequently cited concerns are the potential decline in educational quality and the perceived threat to national languages and cultures (Bowles & Murphy, 2020, pp. 8-9). A particularly sensitive issue related to quality is the English language proficiency of both lecturers and students, as well as the preparedness and pedagogical mindset of faculty members. As Beelen (2007, p. 47) warns, “when the lecturer or students do not have a sufficient command of the language of tuition, the quality inevitably drops,” resulting in “poor quality of communication and interaction in the classroom, and limited learning efficiency” (Bowles & Murphy, 2020, p. 9). As Margić and Vodopija-Krstanović (2018, p. 31) point out, “a fundamental requirement for EMI is high academic English proficiency.” Indeed, “using a second language for

teaching or learning is very different to using it in everyday conversations" (Beelen, 2007, p. 49), and the heterogeneity of lecturers in terms of their English proficiency (as well as their disciplinary affiliation and EMI teaching experience) constitutes a major challenge for this type of initiative (Deroey, 2023, p. 3). Indeed, studies conducted both in Spain (Durán-Martínez & Fernández-Costales, 2025) and in other countries (Jochems, 1991; Margić & Vodopija-Krstanović, 2015; Vinke et al., 1998) have confirmed the increased workload that EMI teaching entails for lecturers.

A similar situation applies to students. Feng et al. (2023) argue that students' success in EMI classes depends not only on general English proficiency but also on the possession of appropriate academic vocabulary, and students' inadequate level of English is a major concern for lecturers (Abouzeid, 2021). While standardized tests such as TOEFL and IELTS are often used as admission criteria to ensure a minimum linguistic threshold for content learning, some scholars suggest that broader and more comprehensive educational planning is required (Dimova, 2020). This issue has been explored in various regional contexts. Examples include Indonesia (Floris, 2014; Pritasari et al., 2019), South Korea (Lee & Lee, 2018), China (Hu et al., 2014; Wang, 2020), Malaysia (Kaur, 2020), Chile (Reus, 2020), and Turkey (Basıbek et al., 2014). Certainly, a lack of student proficiency in English can become a significant barrier to the successful implementation of EMI (Lee & Lee, 2018; Pritasari et al., 2019). Limited language skills may diminish professors' motivation to teach in English (Hernández-Nanclares & Jiménez-Muñoz, 2017). Additionally, within-class dynamics may be affected, as students tend to participate and interact less than expected, or lecturers may require more time to explain the content. Differences have also been identified in the quantity of content delivered in EMI versus local-language instruction, as well as in "differences in content selection and differences in rhetorical devices used" (Zuaro, 2023, p. 267). This, in turn, may hinder students' understanding of course content (Byun et al., 2011; Chang, 2010; Tatzl, 2011).

Because of these factors, the use of EMI varies significantly across countries due to differences in implementation strategies, language policies, levels of English proficiency, and teaching traditions (Broggini & Costa, 2017; Costa & Coleman, 2013; Pritasari et al., 2019).

Performance and workload in EMI courses

Del Campo et al. (2023) highlight that very few studies have analysed the impact of EMI on students' academic competence and performance, and different results have been presented. Some suggest that EMI students perform better than non-EMI students (Del Campo et al., 2015; Del Campo et al., 2023; Hernández-Nanclares & Jiménez-Muñoz, 2017). Others have concluded that there are no significant differences in the academic performance of EMI and non-EMI students (Arroyo-Barrigüete et al., 2024; Dafouz et al., 2014; Dafouz & Camacho-Miñano, 2016; Guo et al., 2018; Lin & He, 2019; Lin & Lei, 2021; Reus, 2020). Finally, several studies report mixed effects depending on the level and area (Costa & Mariotti, 2017) or even worse performance of EMI students (Arco-Tirado et al., 2018; Bälter et al., 2024).

Thus, most studies report similar or even higher academic performance among EMI students. This finding is somewhat puzzling, given that, as previously discussed, studying in a language other than one's native tongue presents clear challenges (see, for example, Jochems et al., 1996; Jochems, 1991; Snippe & Jochems, 1995). The prevailing explanation is that EMI students compensate for these difficulties through increased effort. This has been confirmed by several empirical studies focusing on the workload faced by EMI students (Rivero-Menéndez et al., 2018;

Tatzl, 2011; Yang & Farley, 2019). All of these studies consistently report that EMI students are required to make an extra effort and take on a heavier workload. As Rivero-Menéndez et al. (2018) observed, one of the four most significant differences between EMI and non-EMI students is effort, understood as the students' commitment to achieving their academic goals despite potential challenges. Since EMI students have opted to study in a foreign language, they are required to invest higher levels of cognitive effort (Bälter et al., 2024; Piesche et al., 2016; Roussel et al. 2017), as well as to put on additional effort and dedicate more time to studying than their peers who learn in their native language.

Specific examples of additional work carried out by EMI students outside the classroom include dedicating extra time to reading and reviewing lectures before or after class, and revising their notes accordingly (Airey & Linder, 2006; Yang & Farley, 2019). Students also report using study materials in multiple languages, consulting additional bibliographic resources, taking private lessons (Reus, 2020), engaging in autonomous learning after class, searching for supplementary materials, and seeking help from peers or study groups (Yang & Farley, 2019).

A particularly relevant nuance is highlighted by Yang and Farley (2019). They argue that additional effort is especially required from EMI students when studying subjects "that involve more reading and writing than those that involve more formula and calculation. (p. 14)" They classify these as "more conceptually oriented (MC) subjects," in contrast to "less conceptually oriented (LC) subjects" (p. 14). The authors also refer to these as "soft applied" and "hard applied" subjects, respectively. They attribute the increased workload to "the cognitive load resulting from linguistic and psychological effects" (p. 21).

To the best of our knowledge, the present study draws on the largest sample to date in the literature examining student workload in EMI contexts. While previous studies have provided valuable insights — such as Rivero-Menéndez et al. (2018) with a sample of 368 students, Tatzl (2011) with 66 students, and Yang and Farley (2019) with 2,912 students – this research analyses 11,427 responses of students across four academic years. This substantially larger dataset enables a more robust examination of perceived workload differences between EMI and non-EMI students, both globally and by subject area.

Method

In Spain, where the present study is situated, an internationalization strategy was launched for 2015-2020. Its aim was to consolidate "a strong and internationally attractive university system that promotes the mobility of entry and exit of the best students, professors, researchers and administration and service personnel" (MECD, 2016, p. 7). Nevertheless, "the lack of competence in English has become a hot issue in Spain" (Lasagabaster, 2021, p. 77), particularly in comparison with other European countries. While the global trend in higher education reflects a steady growth in the number of English-taught courses (Dearden, 2014; Macaro et al., 2018), Spain still lags behind in the integration of English within its higher education system (Llurda & Mocanu, 2024). Despite this, several initiatives have been undertaken to enhance English language proficiency and to promote the expansion of EMI across Spanish universities (Lasagabaster, 2021).

The study was conducted at Universidad Pontificia Comillas, a medium-sized private Spanish university. The university comprises seven different schools with over 13,000 students and

approximately 1,700 lecturers. Both lecturers and students are mainly of Spanish nationality, and the teaching activity is predominantly monolingual. The first EMI program in business administration was introduced in 2013, and all students admitted to this program had an equivalent to a C1 level in English according to the Common European Framework of Reference for Languages (CEFR). This level corresponds to an advanced level of proficiency, enabling students to understand demanding texts and use English fluently and effectively in academic and professional contexts.

This work used a sample of the years from 2016 to 2019. We considered business administration students, distinguishing between those who studied in Spanish (non-EMI group) and those who studied in English (EMI group). The design of both programs in terms of courses was identical, with the only difference being the language of instruction. Both programs were delivered entirely face-to-face, with teaching consisting predominantly of lecture-based classes. The number of contact hours varied by semester and academic year, but students typically attended approximately 25 hours of classes per week in both programs. Online materials were also provided as a complement to face-to-face teaching through the Moodle platform, although the core of instruction was classroom-based. Assessment relied predominantly on examinations, which were used in virtually all courses, and in some cases were complemented by assignments, oral presentations, or other forms of continuous assessment.

The vast majority of courses in the EMI group were taught entirely in English, without code-switching at any time, and those few courses that were taught in Spanish were eliminated from the sample. Since the workload can vary according to the area of knowledge, we grouped the different courses into six categories: General Contents, Economics, Accounting & Finance, Management, Marketing, and Quantitative Methods. Courses in the areas of language and law were eliminated. Regarding language courses, they were taught in the corresponding language (i.e., English courses were taught in English, both in the EMI and non-EMI groups). For this reason, including them in the comparative analysis was not appropriate. Law courses were mostly taught in Spanish, both in the EMI and non-EMI groups, so they were also eliminated.

The dataset was supplied by the Office of Data Governance and Intelligence (“Oficina de Gobierno e Inteligencia del Dato”) at Universidad Pontificia Comillas, operating under the supervision of the Vice-Rectorate for Research, Faculty Development, and Artificial Intelligence. All student data were irreversibly anonymized to safeguard individual identities, in full compliance with the university’s ethical standards and legal obligations concerning data protection. The data were obtained from the Student Evaluation of Teaching surveys, completed by students at the end of each course. One of the items focused specifically on workload: “Hours of work and study per week in this subject (not counting class hours).” Students responded on a scale from 1 to 10, allowing the item to capture their perceived weekly study time for each subject. This constitutes a measure of perceived workload, consistent with previous studies on this topic (Rivero-Menéndez et al., 2018; Tatzl, 2011). The dataset was cleaned by removing incomplete responses and excluding subjects related to law and language (for the reasons outlined above). After data cleaning, the final sample consisted of 11,427 valid records, with 2,870 corresponding to the EMI group and 8,557 to the non-EMI group (see Table 1).

Table 1

Sample Used: # Data per Group.

	General Contents	Economics	Accounting & Finance	Management	Marketing	Quantitative Methods	Total
EMI	632	394	505	527	223	589	**2,870**
Non-EMI	1,701	979	1,859	1,812	511	1,695	**8,557**

In the first part of the analysis, we compared the perceived workload of EMI and non-EMI students across subject areas. The distribution of workload values showed a marked positive skewness, with most responses concentrated at the lower end of the scale and a long tail extending to the right. Due to this non-normal distribution, we opted for the non-parametric Wilcoxon–Mann–Whitney (WMW) test instead of ANOVA. To control for the inflation of Type I error resulting from multiple comparisons, we applied the Benjamini and Yekutieli (2001) correction (BY). Statistical significance was determined using a confidence level of 0.95.

In the second part of the analysis, the same statistical procedure was replicated, but disaggregated by academic year. Instead of comparing, for instance, all General Contents courses across the entire degree program, we distinguished between courses taught in the first, second, and third/fourth years. This allowed for a year-by-year comparison between EMI and non-EMI groups. The data used for this analysis are shown in Table 2. It is important to note that third- and fourth-year courses were grouped together, as the number of observations for each individual year was too small to allow for robust comparisons. We believe this decision does not compromise the validity of the findings, given that, as will be shown, differences between EMI and non-EMI students tend to diminish in the later years of the degree. Additionally, records corresponding to General Contents (124 observations) and Quantitative Methods (139 observations) of third- and fourth-year courses were excluded from this part of the analysis for the same reason: the resulting sample sizes were insufficient for a reliable comparison. It should also be noted that Marketing courses are not offered in the first year of the program and are therefore not included in that year's analysis.

Table 2

Sample Used: # Data per Group (Distinguished by Subject and Year).

		General Contents	Economics	Accounting & Finance	Management	Marketing	Quantitative Methods
1st year courses	**EMI**	559	134	159	158		270
	Non-EMI	1,166	244	263	370		511
2nd year cours	**EMI**	73	133	241	129	107	298

	Non-EMI	411	436	891	372	333	1,066
3rd & 4th year courses	**EMI**		127	105	240	116	
	Non-EMI		299	705	1,070	178	

The R programming environment (R Core Team, 2024) was used to develop the analysis. The following packages were employed: moments (Komsta & Novomestky, 2015), ggplot2 (Wickham, 2016), gridExtra (Auguie & Antonov, 2017), RcmdrMisc (Fox, 2020), effsize (Torchiano, 2020) and stats (R Core Team, 2024).

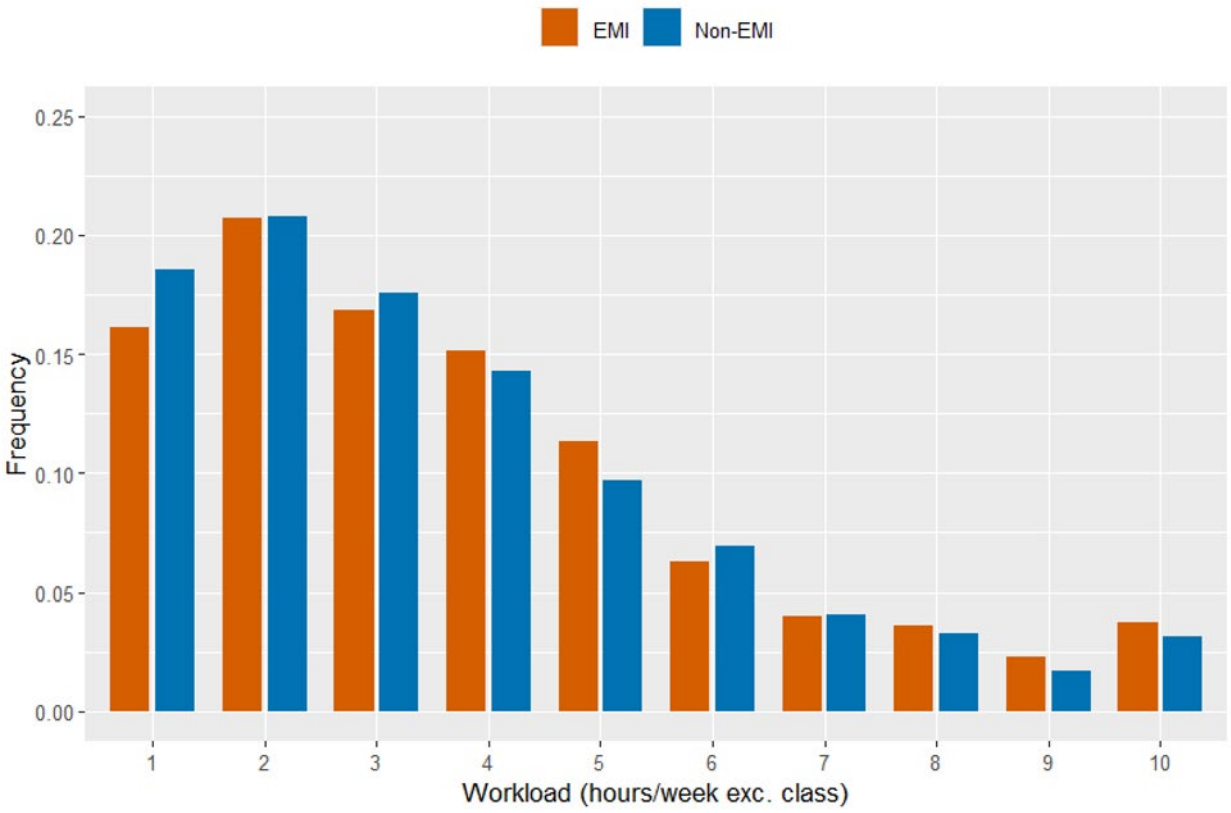
Results

Analysis by subject

First, the distribution of reported workload is positively skewed (skewness = 0.97). Most students indicate that they study only a few hours per week for each course (typically between 1 and 4 hours), and fewer than 15% report seven or more hours of study (Figure 1). Second, the aggregate workload analysis reveals small differences in perceived workload between EMI and non-EMI students. Non-EMI students reported slightly lower average levels of study dedication (mean = 3.61, SD = 2.31) compared to their EMI counterparts (mean = 3.77, SD = 2.36). The differences appear particularly marked among students who reported dedicating only one hour per week. The WMW test confirmed that the difference between the two groups is statistically significant ($p = 0.001$); however, the effect size is negligible (Cliff's Delta = 0.04). Therefore, although EMI students report a slightly higher perceived workload on average, the difference is so small that it lacks practical significance.

Figure 1

Bar Plot for Perceived Workload (All Courses)



However, the subject-by-subject analysis (Figure 2) qualifies this initial conclusion. On the one hand, substantial differences emerge depending on the subject area. Marketing and Management courses are perceived as the least demanding, as they tend to involve the lightest workload. At the opposite end, Accounting & Finance and Quantitative Methods are consistently perceived as the most demanding subjects. It is worth noting that the General Contents courses, taught in the first year, carry the same number of ECTS credits (6) as the others, but are delivered over a full academic year rather than a single term. For this reason, their reported workload is not directly comparable to that of the other, term-based courses.

All workload distributions are positively skewed, though the degree of skewness varies notably across subject areas. In General Contents and Management, the skewness is pronounced (skewness = 2.09 and 1.35, respectively), while in Accounting & Finance and Quantitative Methods, the skewness is much lower (skewness = 0.74 and 0.59, respectively).

Figure 2

Bar Plot for Perceived Workload (Distinguished by Subject)



A comparison across the six subject areas (Table 3) revealed that EMI students reported a higher perceived workload than their non-EMI peers in General Contents, Economics, and Accounting & Finance, and a lower workload in Management (although in this latter case, the difference was marginally significant). In contrast, no meaningful differences were observed in Marketing and Quantitative Methods. However, the effect sizes were small (in the case of General Contents) or negligible (in Economics, Accounting & Finance, and Management), suggesting that, although some differences reached statistical significance, their practical relevance remains limited.

Table 3

Perceived Workload (Hours of Study per Week Excluding Classes), WMW Comparisons by Area Including BY Correction, and Effect Size (Cliff's Delta).

		General Contents	Economics	Accounting & Finance	Management	Marketing	Quantitative Methods
Workload: mean (sd)	**EMI**	2.85 (2.41)	4.04 (2.10)	4.69 (2.17)	2.98 (2.08)	2.81 (1.91)	4.88 (2.24)
	Non-EMI	2.32 (2.13)	3.61 (1.99)	4.32 (2.19)	3.24 (2.18)	3.07 (2.00)	4.72 (2.23)
WMW Test	**Statistic**	W = 631295	W = 216927	W = 520074	W = 442885	W = 52562	W = 523155
	P-Value	<0.001	<0.001	<0.001	0.010	0.088	0.079
Corrected p-value (BY correction)		<0.001	0.001	0.001	0.036	0.214	0.214
Effect size (Cliff's Delta)		0.17 (small)	0.12 (negligible)	0.11 (negligible)	-0.07 (negligible)		

Analysis by subject and year

The year-by-year analysis reveals an interesting pattern, as it shows a clear progression (Table 4). In the first year, EMI students report a higher workload in three out of five subject areas (General Contents, Economics, and Quantitative Methods). In the second year, workloads are generally similar, except in General Contents courses, where EMI students still report higher workload and, in Quantitative Methods, where the trend reverses: EMI students report fewer study hours than their non-EMI peers. By the third and fourth years, no statistically significant differences in workload are observed across any of the subjects, except for Management courses, in which EMI students report slightly lower workloads than their non-EMI peers. However, this difference is only marginally significant, and the effect size is negligible.

Table 4

Perceived Workload (Hours of Study per Week Excluding Classes), WMW Comparisons by Area and Year Including BY Correction, and Effect Size (Cliff's Delta).

			General Contents	Economics	Accounting & Finance	Management	Marketing	Quantitative Methods
1st year courses	**Workload: mean (sd)**	**EMI**	2.86 (2.37)	5.02 (2.14)	4.86 (2.01)	3.87 (2.26)		5.89 (2.15)
		Non-EMI	2.37 (2.00)	3.96 (2.22)	4.60 (2.21)	4.04 (2.35)		5.02 (2.24)
	WMW Test	**Statistic**	W = 371230	W = 21315	W = 22824	W = 28125		W = 84779
		P-Value	<0.001	<0.001	0.111	0.486		<0.001
	Corrected p-value (BY correction)		<0.001	<0.001	0.614	1.000		<0.001

	Effect size (Cliff's Delta)		0.14 (negligible)	0.30 (small)				0.23 (small)
2nd year courses	**Workload: mean (sd)**	**EMI**	2.80 (2.73)	3.58 (1.75)	4.78 (2.10)	2.18 (1.45)	2.84 (1.99)	4.03 (1.95)
		Non-EMI	2.32 (2.51)	3.56 (1.84)	4.57 (2.17)	2.66 (2.06)	3.03 (2.10)	4.67 (2.20)
	WMW Test	**Statistic**	W = 17842	W = 29470	W = 113837	W = 21717	W = 16958	W = 132925
		P-Value	0.004	0.771	0.146	0.095	0.443	<0.001
	Corrected p-value (BY correction)		0.039	1.000	0.726	0.590	1.000	<0.001
	Effect size (Cliff's Delta)		0.19 (small)					-0.16 (small)
3rd & 4th year courses	**Workload: mean (sd)**	**EMI**		3.49 (2.04)	4.22 (2.49)	2.83 (2.03)	2.78 (1.84)	
		Non-EMI		3.41 (1.97)	3.89 (2.14)	3.17 (2.08)	3.15 (1.82)	
	WMW Test	**Statistic**		W = 19435	W = 39208	W = 113795	W = 8870.5	
		P-Value		0.695	0.320	0.005	0.037	
	Corrected p-value (BY correction)			1.000	1.000	0.040	0.263	
	Effect size (Cliff's Delta)					-0.11(negligible)		

Discussion

As previously noted, some studies suggest that there are no significant differences in the academic performance of EMI and non-EMI students (Arroyo-Barrigüete et al., 2024; Dafouz et al., 2014; Dafouz & Camacho-Miñano, 2016; Guo et al., 2018; Lin & He, 2019; Lin & Lei, 2021; Reus, 2020). However, some research has reported differences in academic outcomes, either in favor of EMI students (Del Campo et al., 2015; Del Campo et al., 2023; Hernández-Nanclares & Jiménez-Muñoz, 2017) or in favour of non-EMI students (Arco-Tirado et al., 2018).

Therefore, the vast majority of studies point to equal or even superior academic performance among EMI students compared to their non-EMI peers. It has been suggested that this counterintuitive result may be explained by “the greater efforts that EMI students are expected to make in acquiring new knowledge in a non-native language, compared to a non-EMI group” (Arroyo-Barrigüete et al., 2024, p. 2326), and may also be related to the more mature learning strategies typically adopted by EMI students (Rivero-Menéndez et al., 2018). In this paper, we explored this possibility by examining whether EMI students indeed report making greater academic efforts during their university studies.

At the aggregate level, EMI students reported a heavier workload than their non-EMI peers; however, the effect size was so small that it lacks practical significance. The results obtained from the subject-specific analysis are more nuanced: it seems that differences in workload appear to be associated with the field of study. EMI students reported higher workloads than their non-EMI counterparts in areas such as General Contents, Economics, and Accounting & Finance. In contrast, no significant differences were observed in Management, Marketing, or Quantitative Methods. This is somewhat unexpected, given that prior literature suggests that non-native

students tend to exert more effort in “subjects that involve more reading and writing [more conceptually oriented subjects, MC] than those that involve more formulas and calculation [less conceptually oriented subjects, LC]” (Yang & Farley, 2019, p. 14). Under this assumption, one would expect no differences in Quantitative Methods, as is indeed the case, but noticeable differences in Management and Marketing, which did not emerge in our results. This discrepancy opens up an interesting line of inquiry for future research. It may require a mixed-methods approach (qualitative and quantitative) to explore the underlying causes of these subject-specific patterns in perceived workload.

Lastly, the examination of workload by both subject and academic year revealed that the disparities were most pronounced at the beginning of the degree program. In the first year, EMI students reported spending more hours on courses in three out of the five subject areas analysed (General Contents, Economics, and Quantitative Methods). From the second year onwards, however, workload levels were largely comparable across most subjects, indicating a convergence between EMI and non-EMI groups as students progressed in their studies. In the specific case of Quantitative Methods, an interesting reversal emerges: EMI students reported a higher workload than their non-EMI peers in the first year, but a lower workload in the second year. One possible interpretation is that the considerable effort invested by EMI students in quantitative subjects during the first year (5.89 vs. 5.02 hours per week) may facilitate their subsequent adaptation, reducing the additional study time required in later courses. In this sense, EMI students may capitalize on the greater effort made during the initial stages of the program. Overall, the data suggest that EMI students do indeed need to make an additional effort during the first year of their studies. However, this initial extra workload associated with adapting to instruction in a non-native language tends to diminish over time, as students become more familiar with the EMI context. It is important to note that the effect sizes observed range from small to negligible, depending on the year and subject area (see Table 4), indicating that their magnitude is modest.

Although academic performance was not examined in the present study, previous research conducted at the same institution and in the same Business Administration program offers a useful basis for comparison. Using data from five cohorts, although not the same cohorts as those included in the present study, and controlling for key student characteristics, Arroyo-Barrigüete et al. (2024) found no statistically significant differences in first-year academic performance between EMI and non-EMI students. A longitudinal analysis of a subsample likewise found no significant differences across four subjects over the first two academic years. These results provide additional context for interpreting the workload findings, suggesting that the differences in perceived workload were not accompanied by differences in academic performance.

In conclusion, this study aligns with previous research pointing to the greater challenges faced by EMI students, which often translate into increased effort and heavier workloads (Rivero-Menéndez et al., 2018; Tatzl, 2011; Yang & Farley, 2019). However, it contributes two important nuances to literature. First, the additional effort appears to be concentrated primarily in the first year of the program, likely due to the process of adapting to instruction in a non-native language. It seems that EMI students invest more time and energy during this initial stage, but once they reach a sufficient level of linguistic proficiency, their workload levels converge with those of their non-EMI peers. Second, the effect sizes observed in this study are small, suggesting that while differences in perceived workload do exist, they are modest in magnitude. This finding is likely

related to the profile of the student population at the university where the study was conducted. The academic literature consistently highlights that a lack of student proficiency in English poses a major barrier to the successful implementation of EMI programs (Lee & Lee, 2018; Pritasari et al., 2019). As noted by Feng et al. (2023), students' success in EMI settings depends not only on general English proficiency but also on the possession of appropriate academic vocabulary. In fact, students' inadequate language skills are among the most frequently cited concerns among EMI instructors (Abouzeid, 2021). Language competence, therefore, appears to be a critical factor. At the institution where this study was carried out, students admitted to EMI programs are required to demonstrate a high level of English proficiency through demanding oral and written entrance assessments. This strong language preparation likely explains the small effect sizes observed in this study, in contrast to the larger differences suggested in some prior research.

Taken together, these results offer a possible reconciliation of the diverse findings reported in the literature regarding EMI students' academic performance mentioned at the beginning of the discussion. Whether EMI students perform worse, the same, or better than their non-EMI peers may depend on their entry profile, particularly their level of English proficiency and their willingness to invest greater effort during the initial stages of their studies. In highly selective contexts, where students are both linguistically well-prepared and motivated to meet the demands of studying a non-native language, early workload disadvantages are likely to diminish and may even translate into improved outcomes. In less selective settings, however, lower preparedness or motivation may mean that the additional demands of EMI persist or lead to poorer performance.

Limitations and future research

This study has several limitations that should be considered when interpreting the findings. The most significant is that it was conducted at a single institution. Although the sample size is large, it is possible that the specific characteristics of the university influenced the results. As previously noted, the relatively small effect sizes observed may be partly attributable to the high level of English proficiency required for admission to EMI programs at this particular university. Another limitation is that workload was measured through self-reported perceptions rather than objective time-tracking data. While perceived workload is an important dimension in its own right, it may not perfectly reflect the actual number of study hours invested and can be influenced by subjective factors such as motivation or stress levels. A further limitation is that the study did not directly examine either academic performance or student retention. Future research integrating workload, performance, and retention data could provide a more comprehensive assessment of EMI outcomes. Finally, the data were collected between 2016 and 2019. Since then, higher education has undergone substantial changes, including a broader use of blended and online teaching, asynchronous digital resources, and more flexible forms of learning. These changes may affect how workload is distributed between contact hours and independent study. Accordingly, both the absolute workload levels reported here and the practical recommendations derived from them should be interpreted with caution when applied to contemporary contexts with substantially less face-to-face instruction or greater reliance on asynchronous learning. For these reasons, we believe it is essential to replicate the study in other universities and contexts. In addition, it would be highly valuable to complement this quantitative analysis with a qualitative approach. Conducting interviews or focus groups with students could help uncover explanatory factors behind some of the more unexpected findings, for instance, the absence of differences in perceived workload between more and less conceptually oriented subjects.

Conclusion

In the context examined in this study, where EMI students entered the program with an advanced level of English proficiency equivalent to CEFR C1, the results lead to three main conclusions. First, EMI students appear to need more time for their studies than their non-EMI peers. Second, this additional effort is concentrated primarily in the first year of the program, likely reflecting the initial challenge of adjusting to instruction in a non-native language. From an institutional perspective, this implies that the implementation of EMI programs may not require extensive systemic adjustments beyond the early stages of the degree. Targeted support in the first year, such as language reinforcement, tutoring, or scaffolding techniques, could be sufficient to ease the transition. Third, the effect sizes associated with these differences are small, suggesting that the extra workload is not substantial, a result likely related to the entry profile of the students at the institution considered. Taken together, these findings reinforce the relevance of EMI programs. Most of the literature indicates that EMI students achieve equal or even better academic outcomes. In this context, our results suggest that the additional effort required is moderate and temporary, diminishing after the first year.

These findings may help address some of the reluctance to expand EMI initiatives driven by concerns about student overload. They also have direct implications for enhancing the student experience. The evidence underscores the value of targeted interventions at the early stages of study. Universities could provide structured language reinforcement, discipline-specific vocabulary support, and early academic skills development to facilitate adaptation. Since differences in workload tend to diminish over time, such measures may deliver high impact with limited long-term resource commitments. Furthermore, the study highlights the importance of monitoring workload across subject areas, as patterns vary by discipline, indicating that a one-size-fits-all approach to EMI support is unlikely to be effective.

The main strength of this study lies in the use of a substantially large sample (11,427 records), which exceeds that of many previous studies on the topic. Furthermore, our analysis covers all subjects offered within the degree program and examines workload differences not only by subject area but also across academic years. This comprehensive approach is, in our view, essential for fully understanding the impact of the language of instruction on students' perceived workload. As such, and aside from the limitations discussed above, we consider the conclusions to be robust and a solid foundation for future lines of research outlined earlier.

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