



Disciplinary Motivation in EMI Programs in Israeli Higher Education

Hamutal Berend and Ofra Inbar-Lourie

Tel Aviv University

Abstract

This study examines the relationship between students' motivation to engage in English Medium Instruction (EMI) and their disciplinary background. Employing a mixed-methods approach, it compares the EMI-related motivations of Israeli psychology and computer science students, with a focus on how disciplinary literacy and local multilingual realities influence their attitudes and preferences. Eighty-one students completed questionnaires, and six of them were selected for in-depth interviews. The findings indicate that psychology students reported higher motivation to study through EMI, particularly for academic advancement and integration into global scholarly communities. Computer science students, reported lower overall motivation scores, yet tended to emphasize the perceived workplace and employability-related value of EMI in international contexts. Despite these differing motivations, students in both groups reported reservations about the perceived suitability of EMI for introductory courses and some courses involving conceptually or technically demanding content. The findings suggest that local students studying different disciplines may perceive the value and suitability of EMI differently. These student perspectives may therefore provide one source of information for discipline-sensitive EMI curriculum planning, alongside pedagogical, linguistic, and institutional considerations.

Keywords: EMI; motivation for EMI; disciplinary literacy; localization of EMI; students' EMI perspectives

Corresponding author: Hamutal Berend, Tel Aviv University, Tel Aviv, Israel
Email: berend1742644902@mail.tau.ac.il

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Introduction

English Medium Instruction (EMI) has emerged as a key driver of internationalization in higher education, aiming to provide L2 English speakers with access to academic and vocational resources as well as technological affordances (Bowles & Murphy, 2020). While considerable research has explored the motivations of governments and institutions for adopting EMI, the factors influencing students' decisions to enroll in EMI programs remain underexamined (Wu et al., 2024). This gap is particularly noteworthy given the limited empirical support for the linguistic and pedagogical effectiveness of EMI programs (Macaro, 2018).

Recent research into EMI motivation reveals significant variation largely shaped by geographic and cultural contexts, which complicates efforts to generalize findings across settings. Additionally, emerging evidence highlights differences in motivational levels and rationales among students from distinct academic disciplines (Sahan et al., 2021; Soruç et al., 2024). One plausible explanation for these disciplinary differences lies in the concept of disciplinary literacy - the unique specialized ways in which language is used to construct and communicate knowledge within each field. For instance, the humanities often demand more nuanced and elaborate language use compared to the sciences, which may affect students' motivation to study each of the associated disciplines in another language (Airey, 2020). Accordingly, this study seeks to contribute to the EMI motivation paradigm by comparing students' motivations and preferences across two academic disciplines. In doing so, it aims to identify discipline-related patterns in students' self-reported motivations and preferences that may inform more context- and discipline-sensitive EMI planning. Furthermore, it acknowledges the local relevance of EMI implementation, considering language policies, cultural context, available resources, and the specific needs of both students and lecturers (Drljača Margić & Vodopija-Krstanović, 2016).

Wilkinson and Gabriëls (2021) identify two key reflective strands in EMI research: one concerned with optimizing EMI delivery, i.e. - the 'how', and the other with interrogating its legitimacy - the 'why' - through lenses of identity, equality, and linguistic justice (p. 168). This study engages with both perspectives. It explores students' perceptions that may be relevant to discussions of EMI implementation, while

amplifying local students' preferences and concerns by examining their understanding of the contextual relevance of EMI.

Literature Review

Learning Motivation and SLA

Learning motivation is widely recognized as a key factor in fostering effective learning environments. It is defined as a student's ability to self-direct toward learning goals (Butler & Winne, 1995), or as the driving forces that propel students toward meaningful learning experiences (Makewa & Ngussa, 2015). Taylor (2018) conceptualizes learning motivation as the processes that generate energy and provide direction for engagement. The intersection between motivation and second language acquisition requires domain-specific understanding, due to the unique characteristics embodied in learning an additional language. These include social, psychological, behavioral, and cultural challenges, as L2 learners must not only acquire knowledge of the target language but also learn about its speakers and their distinctive cultures and speech norms. Contemporary understanding of language motivation traces its origins to Gardner and Lambert's seminal study *Attitudes and Motivation in Second-Language Learning*, (1972), on the motivation to study French as a second language in Canada. The study introduced and contrasted two types of motivation: integrative and instrumental. According to Gardner and Lambert, "Integrative motivation refers to a desire to learn a language in order to communicate with members of the other language community and to identify with their culture" (p. 14). Integrative motivation therefore represents a commitment to cultural enrichment and personal growth through language learning. Conversely, instrumental motivation is driven by utilitarian goals, such as career advancement, academic opportunities, or practical needs like travel and international communication. Accordingly, Pintrich and Schunk (2002) defined intrinsic motivation as "motivation to engage in an activity for its own sake", while extrinsic motivation is defined as "motivation to engage in an activity as a means to an end" (p. 245). Dörnyei further developed these concepts showing the relative importance of each of the two motivation types, depending on what he terms "The Language Situation Level", in addition to the "Learner" and "Language Levels" (Dörnyei, 1994). However, the SLA

motivation model most relevant to the present study is Dörnyei's L2 Motivational Self System - L2MSS, (Dörnyei, 2005; 2009). This comprehensive model links motivation to learners' self-concept and future vision as language users and was therefore previously applied to other EMI research studies (e.g., Serna-Bermejo & Lasagabaster, 2023; Kojima & Yashima, 2017). The model consists of three key components: *Ideal L2 Self* – the vision of oneself as a successful language user, which drives motivation; *Ought-to L2 Self* – the external pressures and expectations that influence language learning; and *the L2 Learning Experience* – the immediate learning environment and experiences that shape motivation (Dörnyei, 2009, p. 29).

In recent SLA research, motivation is increasingly conceptualized as a dynamic and context-sensitive construct that interacts with a range of learner-related and contextual variables. Rather than being treated as a stable individual trait, motivation is understood as emerging from learners' engagement with their social, educational, and linguistic environments. From this perspective, motivational processes are shaped not only by individual dispositions, but also by factors such as prior exposure to the target language, institutional settings, and broader sociolinguistic conditions (Ushioda, 2016, 2020). Haim's (2024) study on immigrant youth's plurilingual self-assessment, for example, shows that demographic and social-psychological factors jointly predict learners' self-perceived multilingual competence, suggesting that SES-linked experiences shape both confidence and motivational orientations. Building on this interactional view, SLA research has further highlighted the role of broader social, institutional, and ideological contexts in shaping learners' engagement with additional languages. From this perspective, motivation is influenced by how languages are positioned within educational systems, by perceived opportunities for participation, and by unequal access to linguistic resources across social groups (Dörnyei & Ryan, 2015; Shohamy, 2006). Such contextual factors form part of the broader backdrop against which students' motivation to engage in EMI develops, even when they are not examined directly. Accordingly, the present study conceptualizes EMI motivation as situated within specific disciplinary and educational contexts, rather than as a purely individual learner characteristic (Ushioda, 2016, 2020).

Motivation in EMI

EMI is a complex, multidimensional construct influenced by various psychological and academic factors that shape learning outcomes and student success. A review of the literature identifies several key elements shown to impact motivation in EMI programs. These include linguistic difficulties, academic challenges, psychological factors such as anxiety and self-efficacy, and institutional and pedagogical considerations affecting student engagement (Huang, 2025). The influence of these factors was found to vary across geographical regions and academic disciplines (Vonkova & Moore, 2021), e.g., in Vietnam (Le & Nguyen, 2023), in China (Wu et al. 2024; Zhou & Curle, 2024), in Turkey (Özal, 2017), and in Israel (Inbar-Lourie & Donitsa-Schmidt, 2020). The results of these above quoted studies affirm the centrality of contextual factors on the formation of language-learning motivation (Dörnyei, 1994; 2009). In EMI settings this refers to the local language policy, particularly the status of the local language, the spread of English and the local stance on using English as the language of instruction in higher education programs. Additional local factors include the history and nature of the programs (e.g., whether a new or long-standing program and whether intended for local or international students), their disciplinary distribution, meeting the challenges, such as the amount of support available for both students and lecturers, the assessment policy, the academic hierarchy, and the administrative experience gained (Liao et al., 2025).

Sahan et al. (2021) examined EMI programs in 52 countries and identified notable regional differences in students' motivational factors, especially regarding instrumental motivation. In Europe, students were found to be primarily motivated by career prospects and mobility within the EU, whereas in Asia, motivation was largely tied to global job market accessibility accompanied by concerns about language proficiency. In Latin America, motivation was frequently linked to opportunities for studying abroad, while in the Middle East, EMI motivation was strongly associated with careers in multinational companies.

A notable example of EMI motivation research set in a multilingual environment was conducted in the Basque region, where students have the option of choosing from trilingual academic programs in Basque, Spanish, or English. Serna-Bermejo and

Lasagabaster (2023) applied Dörnyei's L2MSS motivation model to analyze students' medium of instruction motivational patterns. Their analysis revealed that most students were primarily motivated by their Ideal L2 Self and personal preferences, rather than by external pressures from tutors or institutions (Ought-to L2 Self). Another study examined EMI motivation among Japanese university students using Self-Determination Theory (SDT) and L2MSS (Kojima & Yashima, 2017). The findings highlight the interplay between intrinsic and extrinsic motivation in shaping students' engagement in EMI courses. Additionally, positive attitudes toward EMI, a strong vision of the Ideal L2 Self as well as higher perceived competence, were found to support stronger EMI motivation. Based on these insights, the researchers suggest that educators should actively foster students' Ideal L2 Self and strengthen their perceived competence to improve motivation in EMI settings (Kojima & Yashima, 2017). Turning specifically to the Israeli context, Or et al. (2016) surveyed students' and lecturers' perceptions of EMI. Their findings suggest that participants associated EMI with improving English proficiency, accessing international academic resources, and preparing for global career opportunities. Another direction which arises in the recent research scholarship on EMI motivation is discipline specific. Two key issues emerge: First, motivational orientations toward EMI differ across academic fields, as some disciplines exhibit stronger instrumental or integrative motivation than others. Secondly, disciplinary literacy has been proposed as a factor that may shape students' experiences of comprehension, performance, and motivation in EMI settings. Both issues are discussed below.

Disciplinary Perspectives on EMI Motivation

The choice of EMI studies varies across disciplines, yet some notable patterns can be observed. Sahan et al.'s survey (2021) found that EMI is most commonly applied in STEM disciplines (particularly engineering), as well as business-related fields (e.g., business, management, economics), medicine, and international relations. Conversely, EMI was found to be less common in the social sciences and humanities (Sahan et al., 2021).

Instrumental motivation is particularly dominant in Business and Economics studies, with students viewing English as essential for accessing global markets and career advancement (Wu et al., 2024). This stands in contrast to the Social Sciences and

Humanities, where students displayed mixed motivation patterns, with some preferring to study in their native language to enable deeper cultural engagement (Kojima & Yashima, 2017). A longitudinal study by Soruç et al. (2024) indeed found that instrumental motivation (career-driven reasons) significantly contributed to EMI success among Turkish university students, while intrinsic motivation (personal interest) exhibited a negative correlation. However, meaningful predictors of EMI academic success differ sharply by discipline. Among social sciences students' gains in English proficiency and instrumental motivation were the only significant contributors to higher EMI GPA, together explaining 21.7% of the variance. In contrast, for engineering students, increases in intrinsic motivation were the sole significant (and negative) predictor of EMI success, suggesting that rising enjoyment or interest in English over time may hinder performance in linguistically demanding technical courses. Discipline-specific variations also emerged in the Serna-Bermejo and Lasagabaster (2023) study, with Education students identifying most strongly with the Ideal L2 Self and expressing greater interest in EMI, whereas Computer Science students exhibited lower identification with this factor and demonstrated less enthusiasm toward EMI.

Disciplinary Literacy in EMI

Disciplinary literacy has been defined as “the ability to appropriately participate in the communicative practices of a discipline” (Airey, 2011, p. 3). Disciplinary literacy development is perceived as an essential goal to any degree program, as it enables students to navigate and master the language conventions of their field. Airey identified disciplinary literacy in a number of publications as a meaningful factor in EMI research (Airey, 2020), distinguishing between two key knowledge disciplinary structures and their relevance to EMI. The first structure is Hierarchical Knowledge, common in scientific disciplines where knowledge builds sequentially upon previous theories in a structured manner. This is in contrast with Horizontal Knowledge Structures, found in the humanities and the social sciences, where multiple perspectives coexist without necessarily converging. According to Airey, the knowledge structure in scientific disciplines tends to remain constant regardless of language. However, the internal

divergent knowledge structure of the humanities-based fields increases language-dependence. This has meaningful implications for EMI, as the choice to embark upon studies in a less familiar language of instruction (i.e. English in non-English-speaking contexts), may bear more consequences in disciplines with a horizontal knowledge structure. Additionally, the sciences tend to require literacy not just in verbal formats but also in semiotic resources such as diagrams, graphs and mathematical equations, which play a key role in the creation of disciplinary knowledge. Reliance on these other semiotic systems necessarily diminishes the role played by language in the discipline. This distinction underscores the role of disciplinary literacy in shaping academic content accessibility in EMI across different academic fields and may serve as either a motivating or demotivating factor for EMI engagement. Airey further (2011) suggests that both content and language lecturers should collaborate in planning EMI programs according to the disciplinary needs of the students, whether for academic, social or workplace engagements. A heuristic tool in the form of a matrix is offered, “*the Disciplinary Literacy Discussion Matrix*”, intended to enhance a discussion on which language(s) of instruction will be employed pending on the disciplinary knowledge required for different teaching and learning purposes. Dafouz (2025) discusses the significance of disciplinary literacies within the ROAD-MAPPING framework (Dafouz & Smit, 2020), emphasizing the need to provide focused linguistic support to students and lecturers in EMI based on the construct of disciplinary literacies. Taking into consideration the students’ perceptions of their disciplinary and linguistic needs as reflected in the programs may raise awareness of differential linguistic considerations that can promote EMI motivation.

Indeed, a growing body of research has examined students’ EMI perceptions focusing on how learners evaluate course suitability, language demands, and instructional practices. Previous studies indicate that students do not perceive EMI as equally appropriate across all course types. EMI is often viewed more favorably in advanced, applied, or professionally oriented courses, while concerns are frequently raised regarding its suitability for introductory courses or courses with high conceptual density (Macaro & Akincioglu, 2017; Macaro et al., 2018).

Research has also highlighted disciplinary variation in students’ orientations toward EMI, including differences in the language skills students perceive as most relevant for

their studies. These preferences may involve differential emphasis on reading academic texts, writing assignments, or oral participation, depending on disciplinary norms and epistemological practices (Lueg & Lueg, 2015; Macaro et al., 2018). However, while existing research underscores the importance of learner perspectives, systematic comparisons of students' EMI perceptions across disciplines remain limited.

In the present study, conducted among psychology and computer science students in Israeli higher education, motivation for EMI was operationalized as a set of student-reported dimensions reflecting perceived value and affective experience in studying disciplinary content through English. These dimensions included academic advancement, employability and future career prospects, perceived usefulness of English, global integration, self-efficacy, and anxiety. This operationalization builds on multidimensional constructs of motivation in SLA, while foregrounding discipline- and context-sensitive considerations that are EMI specific.

These dimensions also guide the analysis of students' perceptions of EMI course suitability and language priorities across disciplines, as explored in the second research question. In this study, motivation is treated as EMI-specific rather than as general L2 motivation, drawing on established models that highlight learners' future goals and contextual influences. At the same time, its operationalization follows the MSLQ framework (Pintrich et al., 1991), emphasizing students' perceived value of EMI, their confidence in succeeding, and their emotional responses such as anxiety. Consequently, while the study aligns with broader motivational theories, it departs from them by not directly measuring constructs like future self-guides. Instead, EMI motivation is captured through student-reported indicators, including academic advancement, employability, perceived usefulness of English, global integration, self-efficacy, and anxiety, with explicit attention to disciplinary and local contextual factors.

The Rationale for This Research

The EMI studies cited collectively emphasize that motivation in EMI varies significantly across contexts and disciplines, with instrumental motivation being more prevalent in career-oriented fields such as business and engineering, while the social

sciences and humanities show a more complex motivational landscape. Furthermore, emerging research points to the potential role of disciplinary literacy and differential students' perceptions of discipline-related language needs, which may be associated with their reported EMI motivation. However, a review of the literature also shows that EMI policy planning seldom incorporates the students' preferences in the different disciplines, and the extent and nature of their motivation is researched only in the aftermath. Hence, the aims of the present study, conducted with psychology and computer science students in Israeli higher education, were twofold. First, it set out to explore the relationship between students' motivation to study through EMI in their chosen disciplines. Second, the study sought insights as to the students' perceptions and preferences regarding two aspects of the EMI program offered, with the underlying assumption that students' input can constitute a relevant source of information for EMI planning, alongside pedagogical, institutional, and disciplinary considerations. It thus explored students' views as to the kind of courses they feel would be suitable for an EMI format, and the language aspects that should be highlighted. Two disciplines were targeted: computer science and psychology. Though English plays a crucial role in both disciplines, students may encounter discipline-specific literacy practices, consequently perceiving differential EMI value. Computer science tends to align more with the less language-dependent, scientific, and sequential knowledge formation typical of Hierarchical Knowledge Structures, whereas psychology, as a social science, is characterized by a more language-dependent Horizontal Knowledge Structure.

The study was set in an environment which has only recently adopted EMI as a teaching approach and is still struggling to determine its characteristics.

Two research questions were thus posed:

1. Do psychology and computer science students in Israeli higher education differ in their self-reported motivation to study through EMI, and how do students describe the reasons underlying their reported motivation?
2. How do students in the two disciplines perceive the suitability of different courses for EMI and the language skills that should be emphasized in such courses?

The Research Context

The study was conducted in Israeli higher education institutions where the language of instruction is Hebrew, the official dominant language in the country. Israel is a multilingual society with a large Arabic speaking minority. Arabic, formerly an official language, is currently acknowledged as a language of special status. English is recognized as an increasingly powerful and highly desirable language, taught extensively in the school system (Tannenbaum & Shohamy, 2023). Though some EMI courses have been offered over the years in various institutions of higher education in Israel (Inbar-Lourie & Donitsa-Schmidt, 2012), they were not obligatory until 2019, when the Israeli Council for Higher Education approved a reform in English studies in higher education institutions. The decision stipulated that EMI courses would become mandatory, and currently all undergraduates are required to participate in two EMI courses within their discipline (The Israeli Council for Higher Education, 2019). This is a meaningful feat considering the linguistic diversity of the student body, for while English is the L2 for Hebrew L1 speakers, for quite a few students, especially from the former USSR countries, it is their L3 (Aronin & Yelenevskaya, 2022). Additionally, unlike other countries which implement CLIL models (Content Integrated Language Learning) when teaching English (see European Commission/EACEA/Eurydice, 2023; Olsson, 2025), such models which could potentially act as a bridge to EMI, are not part of the Israeli educational system. Moreover, Arabic speaking students have an even more acute problem: while at home they speak the local dialect of Spoken Arabic, at school they switch to Modern Standard Arabic, making English their L4 after Hebrew (Portman, & Abu Rass, 2019). Beyond the coexistence of Hebrew and Arabic, the Israeli higher education context is characterized by the prominent symbolic and instrumental role of English. Although English does not hold official status, it is closely associated with academic prestige, global mobility, and professional advancement in Israel (Shohamy, 2006). Within this multilingual landscape, EMI may be perceived both as an opportunity for academic participation and as a potential source of inequality, given differential access to English across social and educational backgrounds (Tannenbaum & Shohamy, 2023). Research on language policy and motivation has emphasized that the positioning of languages within educational systems intersects with

issues of identity, power, and access, shaping learners' orientations toward English-mediated academic practices (Dörnyei & Ryan, 2015; Ushioda, 2016, 2020).

Methodology

The present study examined motivation for EMI as a multidimensional construct. Specifically, the study measured the following motivational dimensions: internal motivation, academic advancement, employability and future career prospects, self-efficacy, anxiety, and global integration. The selection of these dimensions was guided by the conceptualization of academic motivation in the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich et al., 1991), which views motivation as comprising value-related, expectancy-related, and affective components. In the current study, this framework was adapted to the EMI context in order to capture motivational considerations that are particularly relevant to studying disciplinary content through English.

The study utilized a mixed research approach and included both qualitative and quantitative components. The quantitative component examined whether there were statistically significant differences between students from the two disciplines in their self-reported EMI motivation scores, using a questionnaire adapted from Pintrich et al. (1991), as detailed below. In addition, qualitative data was collected to complement the quantitative findings by enabling a richer exploration of the complexities underlying students' experiences and preferences. Interviews were designed to: (a) reveal the various factors for the motivation levels and the students' considerations in participating in EMI courses; (b) explore which courses they find more EMI-suitable, and (c) gain a deeper understanding to the EMI language aspects' the students prefer.

Research Sample

The research sample comprised altogether 81 participants: 41 students from computer science, 24 males and 17 females, and 40 psychology students, 15 males and 25 females. All participants were undergraduates in various higher education institutions in Israel. The vast majority were native Hebrew speakers, between the ages of 23 to 30, recruited first through personal acquaintance and then by using the "snowball"

method (Naderifar et al., 2017). The majority had completed their studies before the implementation of the policy mandating enrollment in EMI courses, which likely explains why only a small number had participated in such courses. As for the students' English proficiency, all Israeli students are required to achieve a certain standard (referred to as Advanced B, roughly equivalent to the B2 level of the Common European Framework of Reference - CEFR), which helps to minimize initial disparities in English levels over the course of their studies. Consequently, it may be inferred that English proficiency gaps among the participants, all of whom are either graduates or nearing graduation, are relatively minor. All participants filled in the questionnaire.

Six of the sample respondents were selected to take part in semi-structured interviews. The selection process began after the questionnaire data were collected, and potential participants were contacted by email and phone invitations based on their discipline and availability. The criteria for selecting these students included (a) disciplinary background (three computer science and three psychology students), (b) being in the final stages of their undergraduate studies to ensure sufficient exposure to EMI-related experiences, and (c) willingness and availability to participate in a 30–45-minute online interview. This purposive sampling ensured a balance across disciplines and provided in-depth insights from students with advanced academic experience. Below, when referring to the interviewees' responses, we relate to the computer science interviewees as 1, 2, and 3, and to those from psychology as 4, 5, and 6. These students were at the last stages of their studies, three males from computer science, and two females and one male specializing in psychology.

Research Tools and Data Analysis

This study employed a questionnaire adapted from the Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich et al. (1991), a self-report tool designed to evaluate college students' motivational orientations and learning strategies. The MSLQ includes a motivation section (31 items), learning strategies section (31 items), and resource management items (19), totaling 81 items rated on a 7-point Likert scale (Likert, 1932). The questionnaire was grounded in cognitive theories of learning and motivation, particularly Expectancy-Value Theory (Eccles & Wigfield, 2002), Social

Cognitive Theory (Bandura, 1997), and Self-Determination Theory (Ryan & Deci, 2000). Items were adapted from the MSLQ (Pintrich et al., 1991) to reflect these frameworks. For example, questions addressing students' confidence in their ability to succeed in EMI courses reflect Bandura's concept of self-efficacy; questions about the perceived value of EMI for academic or professional purposes align with Expectancy-Value Theory; and items related to intrinsic versus extrinsic reasons for participating in EMI courses draw on Self-Determination Theory. The motivational constructs included in the questionnaire were selected because they capture the key factors that shape students' willingness to engage in EMI namely, balancing perceived value, intrinsic/extrinsic motivation, and self-efficacy in learning content through English.

Adjustments were made to fit the EMI context - followed examples from Hilpert et al. (2013), who used the MSLQ in a geoscience context, and Wang et al. (2023), who culturally tailored it for Chinese medical students. Most items were retained in structure but adapted linguistically to the EMI context (i.e., adding "English" or "EMI" in the phrasing). Following a pilot study and a review by an EMI expert, refinements to the questionnaire were made, and the final version was translated into Hebrew. The final instrument included 45 multiple-choice questions across nine motivational aspects: internal motivation; better employment opportunities; future career; overseas work prospects; academic advancement; general English usage; self-efficacy; assignment-related anxiety; and global integration. It also included three open-ended questions on EMI motivation level, reasons for motivation, and type of motivation (integrative or instrumental). A 6-point Likert scale was used to avoid neutral responses (Bertram, 2007), a method supported by Nemoto and Beglar (2014) and Kusmaryono et al. (2022) for encouraging decisive responses. Likert data were treated as interval data (Norman, 2010). Cronbach's Alpha for the entire questionnaire was 0.968, with subscales ranging from 0.84 to 0.92 (see McNeish, 2018).

A second tool, semi-structured interviews, provided deeper insights into EMI motivation, comprising of the questionnaire topics. Conducted in Hebrew via Zoom, the 30–45-minute interviews were transcribed and translated. Thematic analysis followed Braun and Clarke (2006), ensuring systematic exploration of participants' views on EMI motivation, course relevance, and language use.

The questionnaires for all respondents were analyzed both quantitatively and qualitatively. The multiple-choice questions were analyzed quantitatively using Excel software to examine for statistically significant differences between the students majoring in psychology versus the ones studying computer science ($p < 0.05$). The open-ended questions in the questionnaire and the interviews were analyzed using thematic analysis (Nowell et al., 2017), based on Braun and Clarke's (2006) outline as follows. First, we became familiar with the data and generated initial codes to start organizing the data systematically. Next, we searched for themes, reviewed and modified them. After gathering all the data relevant to each theme, we defined the themes precisely, structured them into main themes and subthemes, and explained their inter-relations. To this end, we used the example provided by Maguire and Delahunt (2017), who applied Braun and Clarke's approach to describe and explain the process of analysis, regarding students' perception of feedback given to them in various courses. The entire student sample ($N=81$) responded to the closed items, while regarding the open-ended questions, 31 out of 41 computer science students responded, compared to 33 out of 40 psychology students.

Ethical measures were taken to ensure the anonymity and consent of the participants. Before completing the questionnaire, each participant was presented with a consent statement. and information about the participants of the study remained confidential.

To strengthen the credibility and interpretive depth of the study, we adopted an explanatory sequential mixed-methods design (Creswell & Plano Clark, 2018). The quantitative phase provided a broad understanding of motivational patterns, whereas the qualitative interviews were intentionally conducted to elaborate and contextualize these patterns. In line with Denzin's (2012) notion of methodological triangulation, the qualitative findings are not intended to stand as independent evidence but rather to deepen and help interpret the quantitative results by offering nuanced explanations of students' perspectives.

In line with an explanatory sequential mixed-methods design, the qualitative component of the study was intended to complement and elaborate on the quantitative findings rather than to function as an independent source of generalizable evidence. The interview data were therefore used to provide interpretive depth and contextual

explanations for the motivational patterns identified in the questionnaire results. Accordingly, the qualitative findings are presented as illustrative and explanatory insights that help clarify students' perspectives and reasoning, rather than as standalone analytic claims.

Findings

EMI Motivation: Disciplinary Differences & Key Factors

Overall Disciplinary Differences

To answer the first research question, the means and SD for each group's motivational aspects were calculated and compared. As is shown in Table 1, in seven out of the nine aspects (1-6 & 9), the psychology students reported higher mean motivation scores for EMI studies, particularly regarding academic advancement, global integration, and professional development. Conversely, findings for computer science students in two aspects (belief in one's ability and anxiety about assignments) demonstrated slightly higher motivation.

T-test analyses were used to compare the averages of the motivation aspects for each group, showing significant differences between the groups¹. The difference between the psychology and computer science students for the entire questionnaire ($M=4.489$ for psychology vs. 3.728 for computer science) was found to be significant ($p \leq 0.001$). Although higher means were found for the computer science students in the remaining two cases, the differences were not statistically significant. Hence, the findings that psychology students consistently reported higher motivation across most of the nine motivational aspects ($p < .05$ to $p < .001$), suggest that students' disciplinary context may be associated with how they perceive and report their motivation to engage in EMI.

¹ Even though the populations are not small, the Shapiro-Wilk test was employed first to ensure the populations are sufficiently close to normal. For the psychology students, the value of the test statistic is 0.960, with a p-value of 0.172. The corresponding numbers for computer science students are 0.973 and 0.437, respectively.

Table 1

Mean Motivation and Standard Deviation Scores for EMI Motivation Aspects by Discipline

Motivational Aspect	Psychology Mean (SD)	Computer Science Mean (SD)	t	p
Internal motivation	4.497 (0.852)	3.668 (1.519)	-3.030	0.004 **
Better employment opportunities	4.487 (1.099)	2.982 (1.442)	-5.233	0 ***
Help with a future career	4.689 (0.863)	3.864 (1.291)	-3.373	0.001 **
Overseas employment opportunities	4.128 (1.047)	2.966 (1.436)	-4.120	0 ***
Assistance in further academic studies	4.923 (0.837)	3.922 (1.336)	-4.037	0 ***
Promoting English for diverse needs	4.646 (1.055)	3.449 (1.196)	-4.741	0 ***
Belief in one's ability to succeed	4.615 (1.328)	4.652 (1.417)	0.121	0.904

Anxiety about English assignments	4.556 (0.876)	4.736 (1.343)	0.714	0.477
Integration in the Global Village	4.141 (1.235)	2.939 (1.32)	-4.200	0 ***
Mean motivation level (overall)	4.489 (0.769)	3.728 (1.101)	-3.613	0.001 **

Note. N = 81 (40 psychology; 41 computer science). Higher scores indicate higher motivation on a 6-point scale.

*p < .05. **p < .01. ***p < .001.

These findings provide the basis for the qualitative exploration that follows, in which students' explanations help deepen and clarify the motivational orientations underlying these differences. Analysis of the interview data identified three main themes that help contextualize the questionnaire results: (1) career orientation and employability, (2) academic advancement and global integration, and (3) self-efficacy and anxiety. The following sections present these themes and illustrate how the interviewed students described the perceived value of EMI in relation to their academic and professional goals. As the qualitative findings are based on only six interviews, they are used to interpret and elaborate on the quantitative patterns rather than to provide independently generalizable evidence.

Career Orientation and Employability

The interview data provided further insight into how the computer science participants understood the professional value of EMI. Their responses reflected differing levels of interest in EMI courses: while some expressed reservations, others associated participation in such courses with improved employment prospects and preparation for

communication in international workplace settings. For instance, Interviewee 2 remarked:

An international company that has to work remotely, then yes, someone who speaks English incorrectly, it reduces his value ... and it can be very problematic for the company, and it also seems less professional. It looks like an unprofessional person who does not know English.

Interviewee 1 added, "*Knowing English is 'a must' in many cases, because many high-tech companies are international... being able to be a part of an international team of developers, yes, I think it can greatly contribute to those taking an EMI course.*"

Several other students echoed similar sentiments, albeit in varying expressions. Another factor that garnered attention from several students was the potential for overseas employment opportunities. To illustrate it, Interviewee 1 explained: "*EMI courses will train you to deal with daily activities of communicating with people from abroad and maybe even relocate easily...*". Conversely, in terms of aiding further academic pursuits and an academic career, the same level of excitement was not evident. Most students were focused on securing employment after their bachelor's degrees, with limited interest in pursuing master's degrees. Interviewee 3 highlighted this sentiment, stating, "*In the academy, the highest salary you could get is no more than nice compared to high-tech salaries. In high-tech, you leave after receiving a bachelor's degree and earn as much as a Ph.D. in the academy does.*"

Academic Advancement and Global Integration

All three psychology interviewees described EMI courses as valuable for their studies and future professional development, although they also expressed reservations regarding the suitability of EMI for particular types of courses. They associated its perceived value with the importance they attributed to English proficiency in psychology, particularly for accessing psychological research and communicating with academic and professional peers. As Interviewee 6 noted:

All the disorders are derived from English, for example. In a course [in Hebrew] called *Ab-Normal*, the lecturer still uses English to name all the disorders. No one says it in Hebrew, people just don't use it, not in clinics, not in academia...

Hence overall, the psychology students conveyed heightened motivation to undertake EMI courses, with various incentives driving their enthusiasm. Job opportunities emerged as a major motivating factor, with Interviewee 5 noting that:

Jobs in data processing, which is statistics, many psychologists deal with statistics, all the software is in English, and if you get stuck and need to find a solution how to work with the software, it will probably be YouTube videos in English.

The pursuit of advanced academic studies also emerged as a driving force, as Interviewee 5 noted, "*It is impossible to avoid English if you want to develop and advance to a master's degree that is mandatory in psychology for any job in the field.*" Interviewee 4 added that "*Anyone who wants to be a psychologist in Israel must get a master's degree in psychology, where all reading materials are in English. Moreover, it is totally impossible to write a thesis without English.*" Furthermore, they expressed interest in improving their English in general and integrating into the "global community".

Self-Efficacy and Anxiety

It is noteworthy mentioning that in two aspects – belief in one's ability to succeed in EMI courses and anxiety about English assignments – no significant differences were observed between the two groups. Both computer science and psychology students showcased a mixture of confidence and reservations in these domains. To summarize, in general the psychology students exhibited greater motivation to participate in EMI courses compared to their computer science counterparts.

EMI Course Suitability

Computer Science Perspectives

In this subsection, we discuss those parts from the interviews, relevant to RQ2 which focused on the type of courses that should preferably be taught in English, compared

to courses that should be taught in Hebrew. Computer science interviewees emphasized that, although it is good to teach courses in English, this should not be all-inclusive. The courses that need to be taught in English are the more professional and specialized ones, i.e., courses that prepare the student for a particular niche.

Interviewee 1 gave an example of this in the context of a professional course offered in Hebrew - "*Computational Learning (in Hebrew) is what is meant here for Machine Learning, so why not use the real name (in English)? No one knows what you mean when you say computational learning (in Hebrew).*"

In contrast, the interviewees believe that some courses should not be taught in English, such as introductory courses, all math courses, and general courses.

According to Interviewee 3, "*It is better to have all the mathematics courses in Hebrew because it is Chinese anyway. Introductions and mathematics, in my opinion, shouldn't be taught in English, it gives no advantage whatsoever*". According to him, there is no advantage in learning them in English, which would just cause overexertion. In addition, the interviewees stated that they were not interested in courses in less "hot" fields, which were less related to future careers, to be taught in English.

Psychology Perspectives

The findings which emerged from the psychology students show that preferences in general were voiced for courses with many technical terms taking place in English, with the lecturers sticking to the source language regarding the professional terms. For example, Interviewee 4 said that:

The *Abnormality* course, which deals with mental disorders and their treatment, is a classic course to teach in English, because the book used everywhere in this course is in English, so why every second translate it and make these unnecessary jumps between the languages.

From the interviews, it emerged that there is no reason to learn the technical courses, such as research methods, statistics, and neuroscience, in English. Interviewee 6 said that:

People come with a crazy phobia to statistics courses in psychology, anyway, so explaining it in English would be an unnecessary obstacle. It's true that the statistics software itself is in English but adding explanations in English, say testing hypotheses or breaking down English formulas, will make people hysterical ... in practice, this can lead people to failures and despair. They are terrified, especially of statistics anyway; it is better to leave them in the comfort zone and challenge another place of content that is easier to explain anyway...

Here, as well as in the computer science courses, there seemed to be widespread opposition to conducting introductory courses in English: "*We took, for example, the course Physiological Psychology, where we learned about the anatomy of the body. With all due respect, I do not see how learning it English would be of any help to my future as a psychologist*" (Interviewee 5).

Essential Language Skills in EMI Courses

In this subsection, we present our conclusions from the open-ended questions and the interviews, relevant to RQ2, which focused on the relevant language skills of each discipline.

Computer Science Students' Priorities

As to reading, computer science students claimed that it is a necessary skill to acquire new knowledge, especially in online platforms. Almost all the material is in English, and the inability to deal with it is a barrier to acquiring new knowledge in the field:

All professionals, both Israelis and non-Israelis, who write solutions and help on all kinds of sites, they all write in English. All the knowledge is in English and avoiding reading it is a considerable drawback. At the end of the day, we know what Google knows, and if we do not understand what Google says, it will greatly reduce our knowledge (a questionnaire response).

However, regarding academic articles, the respondents said they would not want to focus on them, and it is much more complex than what they need to know. Almost everyone noted that this is the least important aspect and should not be emphasized at

all in the first degree. In fact, it is much more challenging to read an article in English than, for example, to speak or write, and subsequently provides no advantage unless one wants to pursue a higher degree in the field. Interviewee 3 said, *"I read during my studies one article in English, and it was insanely difficult, it is irrelevant for a bachelor's degree, maybe only if you want to pursue graduate degrees."*

As for writing, the interviewees generally believed that this skill should be emphasized, and supported the submission of assignments in English because they perceived English writing as relevant to both research and employment in the high-tech sector.

However, they reserved this recommendation by stressing that it would be best to mainly focus on professional writing, e.g., writing emails, rather than aiming for high level writing.

Regarding speaking in English, the interviewees generally perceived it as particularly important for their anticipated employment in the high-tech sector. They associated spoken English with professional communication, including online meetings and interactions with colleagues in international companies. Therefore, they believed that EMI courses should provide opportunities to develop professional speaking and presentation skills worldwide are invariably in English. Therefore, in their opinion, this skill should be addressed in terms of professional speech and presentations:

If somehow during the course, something could have improved speech, that I could gain from it an important skill, like dividing into small groups that we need to talk, focus mostly on speech, talking in English is something that could be very practical at work, especially as a software engineer, who ends up working with people from all over the world. I probably will have to participate in zoom meetings in English as part of my future work. It's a must. In high-tech companies, it's pretty inevitable to know English at a high level, more than just small talk. I think it's something that needs to be emphasized in these classes, to speak good English and be able to have a professional discussion in English (Interviewee 1).

In this context, they also talked about presenting in English, as it is an integral part of the work in high-tech. *"I would like such courses to focus mainly on professional discussions and presentations. This will best prepare me for the job"* (a questionnaire response).

Another recommendation was to acquire the technical terms of their professional world in English: *"During the work I do, most of my reading is in English, both to solve problems and to find material on the Internet, so I must know technical English and know how to manage with material written in English"* (Interviewee 2).

Psychology Students' Priorities

Conversely, all the psychology interviewees perceived reading comprehension, particularly the reading of academic articles, as the language skill most relevant to their field. Interviewee 5 said, *"it is impossible to do anything in psychology without reading articles."* Interviewee 6 *"what will serve people in the degree is mostly to read in English, you are less required to speak and write in English. Reading will best serve psychology students' needs."* In addition, it emerged that writing in an appropriate manner, i.e., awareness of socio-cultural norms is also an important qualification for future jobs, for studies, for writing papers, and particularly for graduate studies. Participants also perceived speaking as important for some professional and academic contexts, particularly for an academic career: "If you need to speak and consult, you need to know how to write and speak English" (a questionnaire response). Regarding professional terminology, it turned out that all interviewees would be very happy to have been taught such terminology in English because the translation is just harmful and burdensome for learning. For example: *"In one of the courses about disorders, the bipolar disorder term is translated into Hebrew. No one in the world of psychology, neither in academia nor outside, uses it, so it is just pointless to even know the term in Hebrew"* (Interview 5). However, the respondents emphasized that things should not be mandatory, i.e., that students should not be compelled to speak only English in class, and grades for homework and exams should not be adversely affected by English levels (Interviewee 4).

Discussion

The differences in motivation between psychology and computer science students mirror the wider trends identified in recent EMI research, where motivational patterns vary across academic fields (Sahan et al., 2021; Soruç et al., 2024; Serna-Bermejo &

Lasagabaster, 2023). While both groups in this study acknowledged the growing significance of English in their academic and professional trajectories, psychology students demonstrated consistently higher motivation across nearly all measured aspects. These findings also need to be considered locally as they align with earlier work by Or et al. (2016), who observed that Israeli students often associate EMI with opportunities for global integration, advanced academic achievement, and improved access to international professional networks. Hebrew, the local language, can be characterized as a “small” language with a limited number of speakers, which impedes the possibility of sharing expertise and engagement with international colleagues in Hebrew-mediated interactions. This applies to both computer science and psychology students and cannot account for the motivational differences. However, a key contribution of this study lies in how the observed motivational patterns can be interpreted in relation to disciplinary literacy. Airey’s (2020) framework offers a useful lens for interpreting these differences, highlighting how disciplines vary in the centrality of language to knowledge construction. The computer science participants tended to emphasize the professional and international usefulness of EMI. This pattern may be interpreted in light of the field’s reliance on code, technical terminology, and other semiotic resources, although the present data does not directly test this explanation. In contrast, psychology students highlighted the need to engage with English sources because key terms often lack Hebrew equivalents. In horizontal disciplines like psychology, the comparatively language-dependent literacy practices associated with psychology may offer one possible interpretation of these students’ stronger reported academic orientation toward EMI., particularly in theoretical and specialized courses.

These findings are consistent with previous research highlighting disciplinary differences in EMI implementation (Wilkinson & Gabriëls, 2021). Moreover, the students’ nuanced views on which courses should be taught in English closely mirror the concerns raised in other localized EMI contexts (Wu et al., 2024; Zhou & Curle, 2024). While both groups favored EMI for mid-level professional courses, their differing views on other course types suggest that discipline-sensitive curriculum planning may benefit from considering how students perceive the suitability and usefulness of EMI.

The findings also align with recent work by Airey (2024), who argues for the necessity of localized, discipline-responsive EMI practices that recognize the semiotic diversity of different academic fields. The emphasis on balancing global English proficiency with local linguistic practices reflects broader trends in EMI scholarship (Macaro, 2018), especially in contexts like Israel, where multilingualism and immigration patterns complicate straightforward implementation of EMI policies (Aronin & Yelenevskaya, 2022; Portman & Abu Rass, 2019).

Furthermore, this study reinforces the observation made by Wilkinson and Gabriëls (2021) that EMI implementation often prioritizes institutional agendas over pedagogical and disciplinary considerations. By foregrounding students' voices, particularly regarding course suitability and linguistic needs, the present research underscores the importance of incorporating learner perspectives into EMI program design, a recommendation echoed by Liao et al. (2025) and others.

The Israeli context provides an especially relevant backdrop for these findings. Unlike many European systems that implement gradual progression toward EMI through CLIL frameworks (European Commission/EACEA/Eurydice, 2023; Olsson, 2025), Israeli higher education moved toward EMI mandates with relatively little preparatory alignment across disciplines. This highlights the potential value of planning EMI in ways that do not simply impose English as a top-down requirement but build on the communicative practices and literacy needs embedded in each academic field (Inbar-Lourie & Donitsa-Schmidt, 2020). Moreover, the multi-modal multilingual direction (suggested by Airey, 2011, 2020) opens up interesting opportunities for EMI program planners which take into consideration local languages and future needs and can potentially impact students' motivation.

Conclusions

This study suggests that EMI cannot be perceived as a uniform educational experience across disciplines. Based on self-reports from psychology and computer science students in Israeli higher education, participants in the two fields appeared to attach somewhat different forms of value to EMI. Psychology students tended to emphasize its perceived relevance to academic reading, advanced study, and participation in

international scholarly contexts, whereas computer science students more frequently emphasized workplace communication and professional English. These patterns should not be interpreted as determining what EMI objectively requires in either discipline. Rather, they provide retrospective insight into how the participating students understood the usefulness and suitability of EMI. Such perspectives may constitute one source of evidence for prospective, discipline-sensitive EMI planning, alongside classroom-based, pedagogical, linguistic, and institutional evidence. The six interviews were used to provide interpretive depth rather than representative or independently generalizable evidence of the qualitative contribution. In explanatory sequential mixed-methods research, qualitative data are used purposefully to interpret, refine, and contextualize quantitative patterns rather than to serve as standalone representative findings (Creswell & Plano Clark, 2018). Following Denzin's (2012) framework of methodological triangulation, the combination of questionnaire data and interview-based insights strengthens the trustworthiness of the conclusions by examining the phenomenon from multiple complementary angles.

One limitation of this study is that the relationship between students' disciplines and their EMI motivation may partly reflect differing English proficiency levels required for admission to each program, rather than purely academic or career-driven motivations. A further limitation is that the study relied on questionnaire and interview self-reports. The findings therefore reflect students' perceptions of EMI and cannot establish the actual linguistic or pedagogical requirements of EMI courses, nor can they demonstrate how students perform or participate in classroom practice. Additionally, since the study examined only two disciplines, the findings cannot be generalized to students in other academic fields. In terms of future research, EMI motivation needs to be examined across a broader range of disciplines to deepen understanding of student needs and determine whether the current findings hold across academic contexts. It would also be valuable to study students in different contexts, as motivation for EMI may vary depending on local career opportunities and language demands within specific fields. Incorporating classroom-based research could provide deeper insights into students' real-time engagement and participation in EMI settings, beyond what questionnaires and interviews reveal.

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Appendix A

Motivation Questionnaire

Introduction: In recent years there has been a trend of introducing content courses in English as part of the curriculum. Such courses are called EMI (English Medium Instruction). This questionnaire is designed to check how much you would be interested in participating in such courses and why.

- The use of this data will be for research purposes only. It is emphasized that no identifying information about you will be stored except for your field of study.
- Clicking the "Continue" button expresses my consent to participate in the study.
- Please check the number that represents your level of agreement with the following statements, where 1 indicates the lowest level of agreement (does not agree at all) and 6 indicates the highest.

A. Internal motivation - (studying the material in English in order to "know it in English" and without compromising knowledge of the content)

1. I would like to participate in EMI courses.
2. I would like to learn the professional terms of my field in English even if it is more difficult.
3. I would like to submit the assignments in English so that I can learn from them even if it might harm my grade.

Studying courses in English:

4. is useless.
5. will cause more damage to the knowledge of the material than the improvement it will give in English.

B. Better employment opportunities

Studying courses in English:

1. will present me better in the eyes of potential employers.

2. improves the chance of working abroad in the future.
3. improves the resume.
4. will not help me get a job in the future.

C. Help in future career

Studying courses in English:

1. facilitates learning additional material in the field online.
2. provides practice for writing a professional document in English.
3. does not help practically in a career in my field.
4. does not help with future career collaborations in my field.
5. helps in making presentations in future work.
6. facilitates Zoom conversations with people around the world in future work.

D. Employment opportunities abroad

1. Studying a limited number of courses in English will not affect getting a job abroad

Studying courses in English:

2. opens more opportunities for relocation.
3. makes relocation abroad easier.
4. helps to integrate into an international society.
5. gives a high chance of working abroad in the future (also appears in Section B - admission to work).

E. Help in academic studies continuation and an academic career

Studying courses in English:

1. makes it possible to use the English, learned in this course, in other courses as well.
2. opens more options for continuing higher studies abroad.
3. facilitates academic collaborations with people in the world.

4. is academically worthless.

5. does not contribute to higher studies continuation in my field.

F. Promoting English for various purposes beyond academic studies, such as reading literature, managing abroad, and watching movies.

Studying courses in English:

1. may improve your English in a variety of areas.

2. makes watching movies in English easier.

3. contributes (if at all) only to the technical English used in the course.

4. facilitates obtaining information from the internet.

5. helps to manage abroad.

G. Belief in the ability to succeed

1. If I tried hard enough, I wouldn't have a problem understanding the material in such a course.

2. I would be able to understand even the most advanced material taught in such a course.

3. I could get good grades in assignments and tests in such a course.

4. I would succeed in such a course.

H. Anxiety about assignments in English (exams, assignments, frontal presentation in class, submitting projects, etc.)

1. I will definitely fail the test in such a course if the test is given in English.

2. If I fail the EMI course it will be mainly because the assignments are in English.

3. The test would not have pressured me at all if it had been given in Hebrew.

4. I will not be able to submit assignments in English.

5. Writing a final/seminar assignment is impossible in English for me.

6. I will not be able to give a presentation in class in English.

I. Integration in the "Global Village"

1. I want to meet lecturers from other cultures.

2. I am interested in getting to know students from other parts of the world.

3. I would like to meet people from around the world who are engaged in my field.

4. It fascinates me to be exposed to cultures different from my own.

Open questions

1. What factors would motivate you to participate in such courses?

2. What factors would discourage you from participating in such courses?

3. If you were to participate in such a course, what would you like them to emphasize in terms of English? For example - does speaking in class (by the students) have to be done only in English? Should the emphasis be on reading articles in English? Should standard writing in English in homework be emphasized? Etc.