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Effectiveness and equity in English-medium instruction: A comparative longitudinal study in a Vietnamese university

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Abstract

The global surge in universities offering courses in English as a Medium of Instruction (EMI) has generated much research. However, few studies have examined the impact of EMI on students’ English proficiency, academic performance, and self-efficacy over time and in comparison, with a parallel Vietnamese Medium Instruction (VMI) programme. Set in a leading Vietnamese university, this thesis investigates this. The study employs a mixed-methods, comparative, longitudinal design. Data was collected in two phases in May 2021 and May 2022 from 105 students, encompassing demographics, Duolingo English Test scores, GPAs, and self-efficacy questionnaire responses. The study also includes a focus group, 21 open-ended questionnaires, and 10 semi-structured interviews conducted over a 12-month period.

The findings unveil a nuanced impact of EMI on students. Even though both groups experienced a declination of English proficiency after one year, EMI group shows slightly less of a decline compared to the VMI group. Qualitative insights highlight EMI students’ advantages in a supportive language environment with exposure and resources, while VMI students rely on personalised learning strategies. EMI significantly hampers content learning, resulting in reduced academic attainment relative to VMI learning. Interviews reveal mixed opportunities and challenges for both EMI and VMI students, influenced by socio-cultural factors, prior knowledge, support systems, and language proficiency. EMI students maintain self-efficacy over a year, while VMI students show a slight improvement in confidence. Key contributors to self-efficacy include opportunities for skill mastery, role models, and affirmations of capability. Disparities exist between EMI and VMI students in terms of backgrounds and performance, but no significant inequity is found within the EMI programme.

For policy and practice implications, the study calls for comprehensive EMI support mechanisms that promote holistic development and self-efficacy, enabling students to thrive in a global academic landscape.
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Declaration of Authorship

I declare that this thesis has been composed solely by myself and that it has not been submitted, either in whole or in part, in any previous application for a degree. Except where otherwise acknowledged, the work presented is entirely my own.

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<td>BERA</td>
<td>British Education Research Association</td>
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<tr>
<td>CREET</td>
<td>Centre for Research in Education and Educational Technology</td>
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<tr>
<td>EMI</td>
<td>English Medium Instruction</td>
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<td>VMI</td>
<td>Vietnamese Medium Instruction</td>
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<tr>
<td>MoI</td>
<td>Medium of Instruction</td>
</tr>
<tr>
<td>DET</td>
<td>Duolingo English Test (DET)</td>
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<td>ZPD</td>
<td>Zone of Proximal Development</td>
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<td>VIF</td>
<td>Variance Inflation Factor</td>
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Chapter 1 Introduction

1.1 Research Background

This opening section provides a brief overview of the global context in which English Medium Instruction (EMI) is emerging. I will review the internationalisation of higher education, the proliferation of EMI, and associated concerns.

1.1.1 Internationalisation of higher education

Internationalisation of higher education can be defined as the process of integrating an international, intercultural, or global dimension into the purpose, functions, or delivery of higher education (Knight, 2008). It encompasses a variety of activities involving individuals, universities, and nations collaborating with foreign institutions. The trend towards the internationalisation of higher education has been driven by the globalisation of knowledge and the commodification of higher education (Coleman, 2006; Doiz et al., 2013; Knight & De Wit, 2018; Villares, 2021). Since the end of the 1990s, neoliberalism has emerged as the dominant discourse in the policy and research agenda around the world (Flubacher & Del Percio 2017; Rata 2012; Turner 2003). The neoliberal doctrine upholds a free market which rewards international competitiveness, global integration and transnational mobility of resources (Boas & Gans-Morse 2009; Harvey 2007). Whilst governments are traditionally perceived as the provider of public goods (M. Apple & Apple, 2018; Rata, 2012), the higher education sector is now being highly decentralised into a growing number of private, autonomous universities (Ha & Ngoc, 2020; Sanders, 2019; Tran & Nguyen, 2018). In many contexts, higher education institutions are left to decide their own internal affairs and compete for limited budgetary funding to finance their own operations (Doiz et al., 2013; Huong & Fry, 2004; Tran & Marginson, 2018; Villares, 2021). Education institutions are increasingly acting like a training ground for human capital, productivity, and competencies as well as for economic gains (Besley & Peters, 2013; Brown & Lauder, 2006; Carnoy et al., 2014; Marginson, 2010, 2011). To increase prestige and visibility, universities turn to a new strategy: incorporate globalisation in teaching, research, recruitment, and service functions through international and transnational measures such as opening
up positions and student admission at the international level (Knight, 2008). Such internationalisation and increased focus on revenue generation raise concerns amongst the public and academic researchers about the blurred line between an education institution and a commercialised entity.

1.1.2 Growth of English Medium Instruction

One popular commercialised strategy is delivering courses in English. English is a global language in both academia and the workplace, recognised as an official language in over 60 countries (Crystal 2003) and spoken by nearly 1.5 billion people (Ethnologue, 2023). Moving beyond the traditional sense as a communicative tool, English in many countries is a high-value commodity appropriated and valorised in the international education sector and the global knowledge economy (Heller 2003). The consequence of the highly regarded command of the English language is the emergence of a demand from students and a supply from universities to deliver academic courses using English as a medium of instruction (EMI) (Galloway, Numajiri & Rees 2020; Hultgren 2018; Doiz, Lasagabaster & Sierra 2011; Carroll-Boegh 2006). EMI courses at universities are offered in three forms. First, often referred to as ‘an English-only EMI model’, a full EMI course is taught to enrolling students. Second, students study courses in both their native language medium and partially in EMI. Finally, a growing number of courses are taught in both English and the native language, making the programme completely bilingual in the instructional delivery (Galloway, et al., 2020). Complimentary services to support the three EMI models are being developed, ranging from as the foundation year programme, English for Academic Purpose in-course support, discipline-specific training for teachers and self-access materials for students (Galloway, et al., 2020; Macaro et al., 2018).

Universities in non-Anglophone countries have embraced EMI as a strategic approach to appeal to international students, providing them with an "international" education within their home countries (Hu and Lei, 2014; Rose and McKinley, 2018). For instance, in Europe, the Bologna Declaration of 1999 played a pivotal role in encouraging universities to offer English-taught programmes, with the goal of attracting international students and promoting student mobility within the European Higher Education Area (Coleman et al., 2018; Lueg and Lueg, 2015). As a result, the number of English-taught programmes in Europe has experienced a significant expansion (Maiworm and Wächter, 2002). Similarly, in Asia, countries such as
China, Japan, and Korea have witnessed a surge in the provision of EMI programmes. This development is driven by the desire to meet the demands of globalised education and enhance the global competitiveness of their universities (Byun et al., 2011; Hu and Lei, 2014; Rose et al., 2020). Japan's 'Global 30 Project' and Korea's 'Globalisation Project' are prime examples of initiatives aimed at promoting EMI courses in their universities (Macaro et al., 2018; Cho, 2012).

EMI delivery offers several benefits to the host country and institutions. First, cultural diversity on campus may be enhanced in non-Anglophone universities that have been able to attract more international students (Bowles and Murphy, 2020). By adopting English as a common language of instruction, EMI facilitates international collaboration and knowledge exchange among students from diverse linguistic backgrounds (Bowles and Murphy, 2020). This fosters a rich learning environment where students engage in intercultural exchanges and gain a broader worldview. Research in Japan has highlighted how EMI programmes have positively impacted students' intercultural communication skills and global awareness (Brown, 2014). Second, universities that offer EMI programmes also experience an increase in international visibility and recognition (Hultgren & Wilkinson, 2022). This can lead to improved institutional rankings and higher perceived quality, which, in turn, attracts more students and faculty from around the world (De Wit & Merkx, 2012). For instance, in the Netherlands, English-taught programmes have been instrumental in attracting a growing number of international students, contributing to the country’s reputation as a global destination for international students (Altbach & Knight, 2007).

In essence, internationalisation has emerged as a significant change agent in tertiary education, influencing how higher education institutions position themselves regionally, nationally, and globally (De-Wit & Altbach, 2020). As a crucial strategy of internationalisation, the rise of EMI education offers potential advantages and drawbacks to participating students that deserve more a thorough investigation through research efforts.

1.1.3 Concerns with EMI emergence

A growing number of scholars have highlighted the interconnectedness of EMI policies with broader socio-political issues, such as political conflicts, changes in government, and economic considerations. Decisions about the medium of
instruction are not isolated occurrences but are deeply influenced by broader social, economic, and political processes within local settings (Tollefson and Tsui, 2003). In Hong Kong, as the national government navigates between strengthening national identity and maintaining international outlook and economic development, a bilingual approach to adopt both Chinese medium instruction and English medium instruction in schools is considered (Tollefson and Tsui, 2003, 2007). In South Asia, especially in Nepal, India and Pakistan, EMI is perceived as a means of acquiring linguistic capital, especially English proficiency with the aim of providing access to the global economy (Sah 2022). However, this ideology has resulted in inequality and social injustices, as EMI policies marginalised students from diverse linguistic and socio-economic backgrounds (Sah, 2020, 2022; Sah and Karki, 2020). In the Middle East, EMI policies have led to the depletion of the linguistic capital of the nation (Al-Bataineh 2021). The monolingual conceptualisation of EMI in the institutional practices at Emirati universities has led to a decline in Arabic language usage in the education domain, highlighting the importance of adopting a more inclusive linguistically diverse approach to EMI (Al-Bataineh 2021). In Latin America, Colombian universities view EMI as a crucial step to enhance their global presence and attract international stakeholders, yet the adoption should be accompanied by contextual awareness and consideration of local linguistic and cultural realities (Tejada-Sanchez and Molina-Naar, 2020). In summary, the current research reveals a close linkage between the EMI decision-making process and the overarching socio-political factors of the host country. Existing studies emphasise the need to understand the political economy to grasp the motivations and implications of EMI policies fully. Additionally, research sheds light on the potential consequences of EMI adoption, such as linguistic injustice and educational disparities, calling for a balanced approach that considers the linguistic and educational needs of diverse student populations.

Amid an extensive body of research on the expansion as well as the socio-economic backdrop of EMI education, the equity of EMI effectiveness on students’ academic, linguistic and affective outcomes remains an underexplored area of research. Especially in the emerging contexts such as Southeast Asia, EMI courses are often highly priced and only financially available to a select group of university students (Le-Ha & Ngoc, 2020). Because of the demand for English proficient graduates, EMI is advertised for its market value of having an internationalised curriculum (Nghia, Ngo & Tran 2024). To justify the high tuition fees, EMI programmes claim that their offerings are of higher quality in terms of academic
content, and better at preparing graduates for a global job market in terms of English skills and self-efficacy. Students, and their families, also perceive the high costs as an investment for a better future employment prospects and social mobility (for example, see Le-Ha & Ngoc, 2020 for a review). Previous studies focused on the stakeholders’ perception of EMI and the pedagogical implications of EMI delivery (Macaro, 2018). Much less have been done to shed light on the equity of EMI effectiveness compared to other national forms of medium of instruction at the higher education level.

1.2 Research Context

The current study was conducted in a Vietnamese higher education institution. The institutional structure of the Vietnamese higher education sector provides a unique setting for a comparative analysis of language, content and self-efficacy acquisition outcomes among students undertaking EMI and Vietnamese-Medium Instruction (VMI) programmes. This section provides an overview of the research context of this study. Three key aspects are explored as follows: first, the rationale behind selecting Vietnam for the research context; second, an examination of the Vietnamese higher education landscape; and finally, a review of the development of EMI within Vietnamese higher education institutions.

1.2.1 Rationales for Vietnamese research context

This thesis investigates the equity of EMI effectiveness on students’ learning of content, language and self-efficacy in Vietnam. The country is a particularly appealing research context for several reasons.

First, Vietnam is an emerging market for English-speaking labour force. Located in Southeast Asia, Vietnam boasts a young demographic structure, with over 70% of its population falling into the working age group (ILO, 2023). The country hosts more than 240 universities, enrolling nearly 2 million higher education students (General Statistics Office of Vietnam, 2023). In the late 1980s, Vietnam initiated the Doi Moi (Reform) Policy, opening doors to international cooperation across various sectors, including trade, education, politics, and culture (Irvin, 1995; Pham, 2011). This policy shift prioritises foreign language proficiency as a strategic avenue for modernisation and globalisation (Hamid et al., 2013). The Vietnamese government's ambitions extend beyond enhancing national education; they aim to foster internationalisation. Proficiency in English has become a highly sought-after skill for Vietnamese workers seeking integration into evolving national policies and
domestic workplaces. Simultaneously, quality education enjoys significant value within the population, particularly among the burgeoning middle class with rising incomes and improved living standards. Projections indicate a continuous increase per capita in spending on education in Vietnam between 2024 and 2028, totalling 91 U.S. dollars, an increase of 65% (Statista, 2023). Vietnam’s growing emphasis on English language proficiency and globalisation drives interests in developing graduates’ foreign language skills.

Second, English has been incorporated in the country’s national curriculum that makes EMI at university a natural progression. English was introduced into the nation-wide primary school system at grade 3 (8-year-old) by law in 1996 (Nguyen, 2017). In 2008, the Government launched the National Foreign Language Project 2020, a $US 500 million project aiming that by 2020 a majority if Vietnamese youth will have gained the capacity to use English independently, serving the cause of modernising with Vietnamese characteristics in the globalisation era (Decision No.1400/QD-TTg, 2008). Despite the Project being extended, English has grown in importance in the social and economic life in Vietnam and become the primary foreign language for education, trade, research and international relations (Bui and Nguyen, 2016; Chi-Nguyen et al., 2015; Nguyen, 2017; Nguyen, 2012; Vu and Burns, 2014).

Third, EMI courses have gained significant popularity in Vietnam. Since the first officially recorded EMI programme was introduced in 1998, the number of EMI programmes has increased to a total of more than 200 in 84 higher education institutions across Vietnam in 2017 (VIED, 2017, cited in Ngo, 2019). Nguyen et al. (2017) offer a comprehensive classification of EMI programmes in Vietnamese higher education system. In detail, there are two main types of EMI programmes, namely foreign and domestic programmes. As for the foreign programmes, there are offshore and franchising options in which students are awarded degrees by foreign and local universities respectively. These programmes are also referred to as the ‘joint programmes’, and the ‘advanced programmes’ respectively for their nomenclatures. As for the domestic programmes, these courses are locally developed content with reference to elements of foreign curriculum, and students are awarded local degrees under the label of ‘high quality programmes’. In this study’s context, the EMI programmes are developed and delivered by local Vietnamese content lecturers, in line with the disciplinary foreign-borrowed materials (Ha et al., 2020; Ngo, 2019; Noorashid, 2020). These EMI programmes are publicly advertised as ‘high-quality’ programmes (chuong trinh chat luong cao).
to distinguish from ‘standard quality programmes’ (chuong trinh chuan), which are delivered in Vietnamese as the first language medium of instruction for the majority of Vietnamese students (Tri & Moskovsky 2019). Table 1 describes a classification of EMI programmes in Vietnamese higher education system.

**Table 1** EMI programmes classification in Vietnamese HE system
(Nguyen et al., 2017, p.40)

<table>
<thead>
<tr>
<th>Types of programme</th>
<th>Programme nature</th>
<th>Programme nomenclatures in Vietnamese HE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign programmes</td>
<td>Offshore</td>
<td>Joint programmes</td>
</tr>
<tr>
<td></td>
<td>Franchising</td>
<td>Advanced programmes</td>
</tr>
<tr>
<td>Domestic programmes</td>
<td>Locally-developed with foreign reference</td>
<td>High quality programmes</td>
</tr>
</tbody>
</table>

In summary, what distinguishes EMI courses in Vietnam extends beyond their educational aspects – it is their potential for commercialisation. These English-taught degrees cost nearly double the fees of Vietnamese-taught programmes, not only generating substantial revenue for the offering universities but also creating a significant barrier to entry for students from lower socio-economic backgrounds (Tri & Moskovsky, 2019). However, the critical question that remains is whether EMI graduates emerge better prepared for the workplace compared to their peers in non-EMI programmes. This thesis focuses on comparing domestic EMI programmes, which are developed locally with foreign references and are known as 'high-quality programmes' (chuong trinh chat luong cao), with their VMI parallel programmes in Vietnamese universities. A comprehensive exploration of the university, the EMI and VMI programmes examined in this study is offered in Chapter 3, Section 3.3 (Research Setting).

This comparison offers a unique opportunity to delve into issues surrounding language and content learning, self-efficacy outcomes, equity, and social justice. Through this research, I aim to address the gaps in the equity of EMI learning and provide a deeper understanding of the educational landscape in Vietnam and other similar contexts, where EMI is becoming increasingly prevalent.

### 1.2.2 An overview of the Vietnamese higher education sector

This section provides a brief overview of the ideological tensions that lays the building foundation of the Vietnamese higher education. The Vietnamese higher education sector blends three contradictory ideologies of neoliberalism, socialism,
and Confucianism (Le-Ha & Ngoc, 2020; Welch, 2010). Neoliberalism can be described as a capitalist ideology that proposes to extend individual freedom through an institutional framework of strong private property rights, trade liberation, and free markets (Harvey, 2007). According to neoliberal doctrine, resources are most efficiently distributed through market mechanisms that reward the forces of international competitiveness, global integration, and transnational standardisation (Boas & Gans-Morse, 2009; Harvey, 2007). As a result, the dominant discourse has dramatically converted the conventional role of government as a guardian of public goods into that of an administrator, operating to facilitate the manifestations of market forces on various public services (Apple & Apple, 2018; Rata, 2012; Turner, 2003). As part of this global wave, the Vietnamese government, like many others, significantly decentralised its higher education sector, evidenced in the transfer of more institutional power to universities and colleges over their internal affairs, and in the diversification of budgetary funding for those institutions (Huong & Fry, 2004; Oliver et al., 2009).

Although the trends towards decentralisation and greater institutional autonomy are similar across the world, they will play out differently in different contexts. In Vietnam, because of its communist regime, one might expect the clash to be particularly strong (Le-Ha & Ngoc, 2020; Welch, 2010). The ruling Communist Party of Vietnam adopted Marxist socialism as its official guiding doctrine (London 2006). This means the State will retain central control over policy decisions on economic planning, education management and all other domains of people’s social lives (Elgström & Hellstenius, 2011; Hoang et al., 2018; Kelly, 2009; Moore, 2014). Under the supreme leadership of the Vietnamese Communist Party, 1986 marked the implementation of the opening-up reform called Doi Moi, signifying a new era of globalisation for all sectors of Vietnamese economy and society (Irvin, 1995; Pham, 2011). In line with the Doi Moi policy, Vietnamese higher education sector has been forced to change with a dual mission to:

“strengthen the country’s human resources to serve the cause of industrialisation and modernisation within the context of Vietnamese socialist-oriented market economy and international integration.”

(Resolution No.29-NQ/TW, 2013, author’s translation)

Higher education in Vietnam symbolises a breeding ground through which to instil socialist beliefs into the future generations through compulsory components of
Marxist-Leninist teaching at tertiary level (Le-Ha & Ngoc, 2020; Ngo, 2020; Nguyen, 2018; Pham, 2018). Higher education is commissioned to harness the pervasive forces of neoliberalism, contributing to the global integration process of Vietnam with other countries (Hoang et al., 2018; Le, 2014; Le-Ha & Ngoc, 2020; Pham, 2018).

At the same time, the long-standing tradition of Confucianism in Vietnamese society intensifies the inherent conflict between neoliberalism and socialism in the education domain (Ngo, 2020). Historically, Confucianism refers to an ancient Chinese belief system that influenced Imperial China and its tribute system including Vietnam and other Asian countries (Huong and Fry, 2004). At its core, Confucian values uphold the role of the State in arranging education system for the betterment of the society whilst emphasising education, and the practice of elitist private education as a noble means to human’s flourishing life and future (Nguyen, 2016).

At the national level, the Confucian legacy justifies the chief role of the Vietnamese socialist government, like that of the past imperial rulers, in managing the national education system. However, at the individual level, Confucianism shares commonalities with neoliberalism in the pragmatic view of education as individual pursuits and as human capital gains whilst implicitly advocating the practice of elitist education (Ngo, 2020). The social divide and inequalities generated by neoliberalism are further supported by elements of Confucian principles, heightening the contradiction with an equally distributed society pursued by socialist ideals (Ngo, 2020).

This ideological tension seems to be particularly pronounced in the recent introduction of English-taught courses, alongside its traditionally Vietnamese-taught options at universities (Nguyen, 2018; Noorashid, 2020; Tran and Nguyen, 2018). On the one hand, the incorporation of EMI courses into the Vietnamese tertiary system signifies a neoliberal shift, aligning with the global trend of market-oriented education. This manifests in the adoption of English, considered the lingua franca of commerce and technology, as a medium of instruction at universities – a strategic response to the growing demands of a globalised job market. EMI courses are typically associated with an emphasis on individualism, competitiveness, and the cultivation of skills aligned with international industry standards such as English language proficiency, business acumen, and high self-efficacy level. On the other hand, the persistence of traditional Vietnamese-taught courses reflects the enduring influence of socialist and Confucian values. These VMI programmes serve as guardians of cultural heritage, fostering a sense of national identity and social cohesion so there remains a number of mandatory courses in socialist philosophy.
and Vietnamese culture for students from both VMI and EMI routes to undertake in Vietnamese language.

The language of instruction, in this context, serves as a vessel for the transmission of cultural values and historical narratives. Furthermore, the tension between ideologies is perpetuated in the unequal distribution of resources between EMI and VMI courses. EMI programmes often require substantial financial resources, reflecting the neoliberal emphasis on profit-driven education where the fees for VMI programmes are heavily subsidised and kept at a lower level than those for EMI ones, reflecting the underpinnings of socialism in welfare and egalitarian principles. This resource disparity reinforces existing social hierarchies, as students in EMI courses may have access to better facilities and opportunities compared to their counterparts in the traditional programmes.

In summary, Vietnamese higher education operates in a highly contested field where ideologies co-exist and compete to dominate the policy and practice agenda. The introduction and commercialisation of EMI programmes reflects the multifaceted ideological struggle within the sector. Further research is essential to explore potential inequities between EMI and VMI programmes at Vietnamese universities.

1.2.3 English Medium Instruction in Vietnamese Higher Education

This section reviews the motivations and implementation of EMI courses in Vietnamese higher education system. Motivations for adopting EMI among policy-makers and university administrators in Vietnam echo the neoliberal incentives for better socio-economic opportunities (Duong & Chua, 2016; Le, 2012; Ngo, 2019). EMI is cited as a symbol of internationalisation of higher education (Ngo, 2015; Pham & Ba-Ngoc, 2020; Tran & Marginson, 2018; Tri, 2021). EMI scholars in Vietnam have highlighted a policy-practice gap in which EMI policy is perceived and implemented differently by policy makers and practitioners (Hamid et al., 2013; Nguyen, 2018; Tran & Nguyen, 2018). The implementation of EMI policy in Vietnamese universities has encountered three key issues. First, a persistent lack of quantity and quality of EMI lecturers was found in several studies (Nguyen & Burns, 2017; Pham & Ba-Ngoc, 2020; Vu & Burns, 2014) which suggests an urgent need for pre-service and in-service training of EMI practitioners. Second, there is a mismatch between the international curriculum of EMI and local students’ preparedness (Ngo, 2019; Nguyen et al., 2017; Nguyen & Tran, 2018; Tran &
Nguyen, 2018; Tran & Hoang, 2019). Finally, one key expectation of EMI implementation is that participants can improve their English language knowledge and skills through a higher exposure to English-mediated resources (Noorashid, 2020). However, Vietnamese researchers have called for caution against such claims and warned EMI as ‘a pedagogy of assumptions’, calling for empirical evidence to validate the extent to which students learn English, content and develop their skills in Vietnamese universities (Pham & Ba-Ngoc, 2020).

In summary, the adoption of EMI in Vietnam echoes a broader international trend, driven by the strategic agenda to increase the nation’s competitiveness and graduates' employability. However, the implementation of EMI has unveiled a significant policy-practice gap. Despite the anticipation of improved English proficiency through increased exposure to English-mediated resources, cautious voices among Vietnamese researchers warn against overestimating these outcomes. Notably, a research gap emerges concerning the empirical evidence of EMI's actual effectiveness in enhancing English language, content learning and self-efficacy development within the specific context of Vietnamese universities. Further investigation is crucial to provide a comprehensive understanding of its implications for both policy and practice.

1.3 Research gaps and aims

In this section, I highlight the existing gaps in the literature, aiming to underscore the aims of this study in addressing these gaps both empirically, theoretically, and methodologically.

1.3.1 Empirical Gap

In the Vietnamese higher education landscape, there exists a significant empirical gap regarding the effectiveness of EMI programmes and its equity in achieving students' academic, language, and self-efficacy goals. This gap, as highlighted earlier, is not only a concern for families and students investing substantial financial resources in EMI but also poses challenges for universities and potential stakeholders contemplating the expansion of similar programmes in Vietnam.

To address the identified gap, I conduct a comprehensive, longitudinal study to track changes in students' learning outcomes between EMI and Vietnamese-Medium Instruction (VMI) modes of study. By providing concrete evidence of the
time-sensitive changes resulting from participation in each instructional medium, this research aims to offer valuable insights into the effectiveness and equitable effects of EMI learning. The investigation specifically examines language proficiency, content knowledge and self-efficacy, shedding light on the tangible impacts of EMI education, compared to the first language medium of instruction.

This empirical research is vital not only for students and their families seeking justification for their investment in EMI but also for higher education institutions and stakeholders, as it informs strategic decision-making for the implementation and expansion of EMI programmes. Without a clear understanding of the effectiveness of EMI education, institutions may face challenges in developing successful strategies, potentially hindering the overall success and sustainability of EMI programmes in the Vietnamese higher education context.

1.3.2 Theoretical Gap
Despite the increasing practical application and research interest in EMI (Bowles & Murphy 2020; Macaro et al. 2018; Dearden, 2014), the theoretical dimensions of EMI remain largely unexplained (De-Costa, Green-Eneix & Li, 2021; Block & Khan, 2020). The lack of theoretical clarity hinders a shared understanding among researchers, regarding the key concepts, terminologies, and variables within the context of EMI education. Furthermore, the absence of a robust theoretical framework prevents researchers from integrating previous knowledge and literature into more recent studies.

To bridge this theoretical gap, this study draws on a wide range of theories encompassing content learning, language acquisition, self-efficacy, and sociology of education. These theoretical considerations play a crucial role in providing a conceptual framework that enhances the clarity of key terms and variables, guiding the formulation of precise research questions and hypotheses (Gerring, 2011). For instance, in this study, theories of language acquisition help define the intricacies of language proficiency outcomes in EMI learning, while theories of content learning contribute to understanding the cognitive, social-constructivist processes underlying content knowledge acquisition of participating students. Moreover, the incorporation of self-efficacy theories by Bandura, Freeman & Lightsey (1999) aids in delineating the psychological dimensions of EMI effects. By examining how students' belief in their abilities influences their outcomes, the study aims to provide a more comprehensive understanding of the personal and motivational aspects at play.
within EMI education. From a sociological perspective, my research draws on Bourdieu’s theory of forms of capital and social reproduction. This theoretical lens illuminates the relationships between students' background factors and the potential influences and interactions with EMI effects. By integrating sociological theories, the study aims to address the theoretical gap and provide a structured foundation for interpreting and understanding the (in)equitable impacts of EMI on diverse student populations.

The incorporation of this holistic theoretical framework is instrumental in enhancing the validity and reliability of findings. These theories assist in identifying relevant variables, developing testable hypotheses, and ultimately contributing to a more robust understanding of the nuanced dynamics within EMI education. The multifaceted nature of the theoretical foundation, spanning content learning, language acquisition, self-efficacy, and sociology, ensures that the research findings are not only academically rigorous but also comprehensive and applicable to the diverse educational landscapes impacted by EMI programmes.

In summary, this research addresses two significant gaps in the EMI literature: unclear terminologies and under-explored equity issues. Employing an inter-disciplinary lends from inter-related fields such as second language acquisition, educational assessment, psychology of education, the study aims to operationalise key concepts of EMI including language proficiency, content learning and self-efficacy within EMI contexts, bringing much-needed clarity and rigour to the field. Furthermore, this study delves into equity concerns using Bourdieu’s theory, investigating potential disparities in Vietnamese students’ access to and performance in the EMI programme. By filling these critical knowledge gaps, the research seeks to not only establish terminological precision but also move the field towards developing equitable EMI education in Vietnam and similar contexts.

1.3.3 Methodological Resilience During Covid-19

In this study, I employ an original comparative, longitudinal, mixed-methods design that incorporates data from various sources such as academic and English test scores, self-constructed self-efficacy questionnaires, background surveys, focus groups, and interviews. This comprehensive approach to data collection and analysis aims to generate comprehensive findings and address the methodological gap in the existing literature. The study proposed a highly adaptable research design capable of collecting primary data in adverse conditions. This addresses the
methodological need that the research design remains resilient and adaptable, even during challenging and global health emergency circumstances such as the COVID-19 pandemic.

All in all, this study aims to explore the long-term, comparative outcomes of EMI education in Vietnamese higher education, specifically focusing on the effectiveness, equity and perceptions among students. To achieve this overarching aim, I empirically analyse factors influencing the changes in student performance in three key areas namely English proficiency, academic content learning, and self-efficacy. Furthermore, I theoretically examine the conceptual complexities of EMI through a comprehensive framework spanning diverse disciplines. Finally, I methodologically ensure research rigour and reliability through a longitudinal design, encompassing a variety of data sources, and adaptability to changing research challenges.

1.4 Thesis Structure

The thesis adopts a meticulous and well-structured approach as follows. Chapter 2 establishes the theoretical and empirical groundwork, discussing in detail key concepts like English Medium Instruction (EMI), language proficiency, content learning, self-efficacy, and educational equity. It delves into relevant definitions, explores underlying theories like constructivism and Bourdieu's social capital framework, and critically reviews existing research findings in each area. This comprehensive review lays foundation to the identification of knowledge gaps and the precise formulation of research questions and hypotheses, setting the stage for the in-depth analyses that follow. Chapters 3 to 6 then dissect the effectiveness of EMI and its equitable impact on student outcomes through dedicated investigations. Each chapter focuses on a specific domain: Chapter 4 examines changes in language proficiency, Chapter 5 delves into content learning outcomes, and Chapter 6 analyses shifts in student self-efficacy. Within each chapter, rigorous data analysis unfolds, encompassing descriptive statistics and appropriate statistical tests to establish the multi-facted impacts of EMI. Furthermore, the thesis acknowledges the complexities of equity within education, dedicating space to analysing the interaction between EMI and various forms of social capital (cultural, economic, and social) to reveal potential disparities in its effectiveness. Qualitative data or student perspectives further enrich the analysis, offering nuanced insights into how students perceive the impact of EMI on their learning and confidence.
Finally, Chapter 7 synthesises these findings, presenting a thematic summary, outlining academic contributions, discussing policy implications, and acknowledging limitations to pave the way for future research. This comprehensive framework ensures the thesis delivers a nuanced and insightful exploration of EMI's effectiveness and its implications for equitable educational opportunities.
Chapter 2 Review of key concepts and literature

2.1 Introduction (key concepts, theories and empirical evidence)

The literature review within this thesis is structured to provide a comprehensive exploration of key areas of the literature pertinent to this study. It is organised into six sections: (i) Defining EMI, which explores the conceptual debates around the terminology of EMI, (ii) Understanding English proficiency, which reviews key works on the definition, mechanisms, assessment of English proficiency, and empirical findings on EMI’s impacts on language proficiency (iii) Understanding content learning, which outlines different theories of learning, how learning occurs and ways of evaluating learning, and studies on content learning outcome in EMI research, (iv) Understanding self-efficacy, which establishes academic insights into self-efficacy as a psychological construct, how the construct is assessed, and studies on self-efficacy outcome in EMI research (v) Understanding educational equity, which looks into definitions of equity in education and the relevance of Bourdieu’s theory of capital and social reproduction in this study, and a review of Bourdiesuan studies in EMI research, and finally (vi) A summary of research gaps and research questions. This structured approach ensures a thorough investigation into the multifaceted nature of EMI, highlighting the research gaps and paving the way for research questions and hypotheses to be formulated.

2.2 Defining English Medium Instruction

EMI has become a focal point for government agencies, international organisations, educational institutions, and private businesses (Dearden, 2014; Rose et al., 2020). The rise in EMI policy concerns has led to a substantial increase in academic scholarship, with numerous papers and books published on the topic over the past decade world wide (Dearden, 2015; Galloway and Sahan, 2021; Lasagabaster, 2022; Macaro, 2018; Sahan et al., 2021; Simpson, 2017). Although researchers have dedicated significant effort to discussing the meaning of EMI, a consensus remains elusive (Dearden, 2014; Fenton-Smith et al., 2017; Galloway, Curle, et al., 2020; Kirkpatrick, 2017; Macaro, 2018; Rose et al., 2020).
One of the most cited definitions is provided by Ernesto Macaro, Director of EMI Oxford's Research Group for Research and Development on EMI, in which EMI is understood as:

‘the use of English language to teach academic subjects (other than English itself) in countries or jurisdiction where the first language of the majority of the population is not English’ (Macaro, 2018, p.1).

In the opening chapter of his book, Macaro (2018) acknowledges this definition as deliberately provocative and highly problematic for which further discussions should be channelled around the conceptual issues of EMI.

Among the controversies, the meaning of the ‘E’ in ‘EMI’ is highly questioned. The rise of English as a global language led to a proliferation of language ideologies and attitudes with contrasting implications on the types of English used. Some maintain a firm stance on a dichotomy between native versus non-native speakerism (An, Macaro & Childs 2019, 2021) whilst others advocate the adoption of Global Englishes which recognizes other varieties of English around the world (Boonsuk, Ambele & McKinley 2021; Fang & Ren 2018; Galloway & Rose 2015; Canagarajah 2012; Pennycook 2001, 2006). Macaro’s (?) definition is not clear as to which type of English involved in EMI implementation and whether non-native forms of English language are acceptable in EMI practice (Bolton & Kachru, 2006; Fenton-Smith et al., 2017; Kachru, 1997; Walkinshaw et al., 2017). To provide a holistic analysis of EMI, English is perceived as a global language spoken around the world, regardless of origin and native speakerism, in this thesis.

The provided definition also does not address how much English should be used in EMI. Whether English is referred to as ‘the’ or as ‘a’ medium of instruction conceals contrasting assumptions (Graham, Eslami & Hillman 2021). In the first instance, English as ‘the’ medium of instruction supports the exclusive use of English in teaching and learning, which is manifested in the so-called English-only policy in various countries (Chapple, 2015; Hamid et al., 2013; Kang and Park, 2004; Kim and Sohn, 2009; Rose et al., 2020). By contrast, Galloway, Kriukow & Numajiri (2017) highlighted the need for using students’ first language alongside English for flexibility between teachers and students in EMI classroom interaction. Even so, this can still raise exclusion issues with international students who do not speak the language of most local students in a non-Anglophone country where EMI takes place (Kim et al., 2014). When English is labelled as ‘a’ medium of instruction, the
implication is that the use of other languages is possible and hence, a more flexible language practice can be adopted in EMI implementation (Graham et al. 2021). In this thesis, English is used as the dominant language of instruction, but not the only language used.

Another point of contention is related to the geopolitical scope of EMI. By excluding the Anglophone countries (e.g. the UK, the US, Australia), the given definition dismisses a fast-growing number of L2 English international students enrolled in universities in those entities due to heightened waves of international migration and student mobility (Galloway et al., 2020; Humphreys, 2017; Jenkins and Mauranen, 2019). Whilst Macaro (2018) maintains that English is not the dominant first language of most speakers in a qualified EMI context, other scholars argue the recent sociolinguistic changes have turned those inner English-native speaking countries of Kachru’s model (1992) into multilingual and translingual settings that highly resemble that of other outer and expanding countries (Baker & Hüttner, 2017; Dewey, 2021; Humphreys, 2017; Jenkins and Mauranen, 2019; Pecorari and Malmström, 2018). A more geographically inclusive definition of EMI would benefit research to shed light on underexplored issues and challenges that are faced by both stakeholders of EMI settings and those in Anglophone contexts. Because the thesis is focused on the Vietnamese context, this contention is of little relevance and hence not explored in this thesis.

Finally, it is worth acknowledging that not only EMI forms the focus of pedagogical debate, but it is also embedded in the sociolinguistic debates on language ideologies (Macaro, 2018; Paulsrud et al., 2021). The European nation building era during the 18th century gave rise to the view that national languages such as English or French could be established as separate entities, through which to assert their political sovereignty and independence (Canagarajah, 2013; Hultgren et al., 2014; Pennycook, 2016). By contrast, translingualism highlights the reality that people shuttle across languages, and the communicative practices among speakers in multilingual contexts are much more hybrid and fluid than the artificial boundaries set out at the policy-making level (Canagarajah, 2007, 2012; Coleman et al., 2018; Paulsrud et al., 2021). Especially in the EMI field, various studies have shown participants tend to draw on linguistic resources from different named languages, mostly their first language as a coping and meaning-making mechanism within EMI classrooms (Mbirimi-Hungwe 2021; Paulsrud et al. 2021; Rahman & Singh 2021; Yabukoshi et al. 2020; Yuan & Yang 2020). Pennycook (2016) refers to this paradigmatic shift in socio- and applied linguistics as the ‘trans-super-poly-
‘metro movement’, acknowledging there remains a gap of language ideologies at ideological and practice-based level. Whilst languages may remain as discrete and bounded entities at macro level, the practice of translanguaging and code-switching continues to be used by multilingual speakers at ground level (Jaspers & Madsen 2019). It is therefore important to recognise that the global growth of EMI policy is closely associated with a wide variety and complex construction of linguistic practices (Hultgren 2018; Hultgren et al. 2014). The ongoing debate about the fixed/ fluid nature of languages at different operational levels continues to assume an important place in the sociolinguistic literature. Whilst it is not the purpose of this research to address these challenges and possible consequences through methodological techniques, the debate raises awareness of these complexities, thereby informing a linguistically dynamic context within which EMI research operates.

Even though consideration of a hybrid, multilingual model started to gain momentum in other countries (Yuksel, Soruç, Altay & Curle 2021; Curle, Yuksel, Soruç & Altay 2020), a clear choice between VMI and EMI programmes remained codified in all official policy documents and university admission regulations in the Vietnamese system (Nguyen et al., 2017). The dual structure of EMI and VMI programmes in Vietnamese universities provides a starting point for this research to conduct a direct comparison on the effectiveness between the two programmes in terms of content learning, English proficiency and self-efficacy level. This is notwithstanding the fact that this dichotomous conceptualisation represents an idealised abstraction and not the actual practice-based reality, which is likely to be much more complex, multilingual and hybrid.

All in all, debates around Macaro’s (2018) definition help narrow the scope of this study, identifying the relevant studies to be included and ultimately highlight the knowledge gaps in literature about EMI as an evolving concept. Macaro’s definition, amid its caveats, raises awareness of the sheer complexity of the term and the vast variety of approaches to construing EMI, and will, be used as the working definition in this study.

2.3 Understanding English language proficiency

This following section provides a synthesized understanding of key scholarly works related to the definitions, mechanisms, and assessment of English proficiency.
2.3.1 Definitions

Second language proficiency remains a complex and multi-faceted concept, despite its extensive historical development and its central role in the applied linguistics field. Lado (1961) proposed one of the first definitions of language proficiency as the interplay between four language elements: pronunciation, grammaticality, lexical knowledge, and cultural understanding, along with four language skills: speaking, listening, writing, and reading, with translation ability as a fifth skill. According to Lado, language proficiency level pertains to the extent of mastery of each of these distinct language variables through an approved testing mechanism (Lado, 1961).

In the domain of linguistics, Chomsky's 'linguistic competence' theory reoriented the focus from mere test performance to encompass practical knowledge of grammatical structures, pragmatic competencies, and cross-cultural sensitivity in the second language (Canale 1980). Over time, scholars in the second language acquisition field have come to emphasise the pivotal role of proficiency in navigating real-life contexts (Thomas 1994; Higgs 1984). Within this context, proficiency denotes a learner's capacity to operate effectively while using the L2 for pragmatic purposes in real-life situations (Thomas 1994; Higgs, 1984). Taking a psycholinguistic standpoint, Hulstijn (2011) introduces a comprehensive notion of proficiency that includes linguistic and cognitive abilities. This perspective distinguishes between general language proficiency (termed basic language cognition), which pertains to commonplace language elements and everyday communicative scenarios, and specific language proficiency (referred to as high language cognition), encompassing more intricate, infrequently used language elements in both written and spoken discourse (Hulstijn, 2011). As our comprehension of language proficiency continually evolves and becomes more intricate, there has been a proliferation of language assessment scales developed to gauge learners' capabilities in comprehending, adapting to, and mediating various facets of language proficiency in their second language (Davidson & Fulcher 2007; North 2007).

This thesis focuses on the general language proficiency aspect, aligning with Hulstijn’s definition of proficiency as language users’ competencies in general domains. Proficiency, in this study, refers to the holistic assessment of students’ English language skills, including but not limited to vocabulary, grammar, pronunciation, oracy, literacy, reading, and writing. The primary goal of this study is
to examine how learners apply their English language competencies for practical purposes in everyday situations.

### 2.3.2 Language acquisition theories

In the following section, I explore three key language acquisition theories to establish a theoretical foundation for empirically examining the impacts of EMI learning students’ English proficiency over time in this study. Although influential in applied linguistics in explaining language proficiency development, these theories have seen limited application in the EMI context. My goal is to evaluate their explanatory power in understanding the empirical evidence on changes in students’ English proficiency in my research. Three key language learning theories include the time-on-task theory, the threshold hypothesis, and the transfer theory.

**Time-on-Task Theory**

The time-on-task theory in L2, initially proposed by Rossell and Baker (1996), posits that the amount of exposure to the target language significantly influences language proficiency outcomes for L2 learners. In simpler terms, the more students are exposed to using English, the higher their English proficiency will tend to be. EMI settings, where English serves as the primary, if not exclusive, medium of instruction, facilitate extended interactions with English compared to those who receive English as a Foreign Language (EFL) lessons alongside instruction in their native language (L1) (Chen & Kraklow, 2015; Dang et al., 2013; Hu, 2008). However, it is important to note that the "task" aspect in Rossell and Baker's theory combines the dual process of learning the target language and acquiring content knowledge in that language without always distinguishing between their distinct instructional effects.

**Threshold Hypothesis Theory**

The threshold hypothesis theory, initially formulated by Cummins (1976), offers a pivotal framework for understanding differentiated academic outcomes among L2 learners. This theory holds relevance in the realms of bilingualism and bilingual education, delineating different thresholds of bilingualism—namely, semi-lingualism (low input from both languages), dominant bilingualism (native-like proficiency in either of the two languages), and additive bilingualism (high input from both languages) (Barik & Swain, 1976; Cummins, 1979, 1984). Within each threshold of bilingualism, cognitive effects vary, corresponding to the level of bilingual
competence. Linguistic competence’s impact on cognitive development is directly proportional to learners’ bilingual learning experiences. However, the threshold hypothesis primarily focuses on bilingual education among young children and school-age learners, while differences in pedagogical culture between primary and secondary levels, where the hypothesis is most applicable, and higher education levels, where most EMI programmes are delivered, may lead to divergent classroom dynamics and learning styles (Macaro, 2018).

**Transfer Theory**

The transfer theory represents another significant framework that underscores the role of linguistic transfer across languages. Cummins (2017) introduces the interdependent linguistic hypothesis, which posits that L1 medium of instruction education initially enhances learners’ L1 proficiency, and this gain can transfer to L2 proficiency provided there is sufficient exposure to L2 and motivation to learn it. Similarly, Krashen (1996) argues that exposure to academic content in L1 enables children to attain higher L2 proficiency levels. This is because learners benefit from an intertwined network of frame information and contextual clues for meaning making in both languages. Studies have demonstrated that language minority children who receive ample L1 informal support at home tend to excel in English-only schools on average (English, 2009; Farver et al., 2009; Nic-Fhlannchadha and Hickey, 2019; Stoddart et al., 2002). A prominent concern in EMI education is whether learners can effectively absorb new academic content presented exclusively in L2 English without language support programmes. This raises the possibility of knowledge and language proficiency transfer during EMI instruction, given that EMI students often possess a foundation of literacy and language skills in their L1 before their EMI participation.

In evaluation, the time-on-task theory assumes a linear relationship between exposure and proficiency, yet in the multifaceted landscape of EMI education, where learners encounter diverse academic content, the simplicity of this relationship may need to be reevaluated. Similarly, the threshold hypothesis assumes clear-cut thresholds of bilingualism, but the dynamic nature of EMI settings challenges the notion of fixed thresholds. These assumptions beg the question of whether the theories adequately capture the complexity of language learning in EMI contexts. Furthermore, while the transfer theory acknowledges the potential transfer of language skills from L1 to L2, its focus on primary and secondary education contexts
raises questions about its relevance to higher education EMI programmes. The gap in addressing the specific challenges faced by tertiary EMI learners becomes evident, highlighting the need for a more contextually sensitive theoretical framework. These gaps prompt a critical evaluation of the theories' limitations in capturing the intricacies of language learning in the higher education EMI landscape. The selection of these three language acquisition theories serves as a foundation for my research design. While each theory contributes valuable insights, their limitations in addressing proficiency development in an English-instructed higher education environment are to be acknowledged. This critical evaluation informs my research process and underscores the need for a nuanced approach in examining the impacts of EMI education on students’ proficiency at universities.

2.3.3 Language assessment approaches

Language assessment serves as a fundamental tool for evaluating learners’ proficiency levels through the application of language testing. A valid test, as Messick (1995) emphasises, accurately measures the intended constructs of interest, enabling meaningful inferences from test results (Newton and Shaw, 2014; Read, 2015; Sinclair and Lau, 2018). Reliability, another vital aspect of language tests, necessitates consistency and minimisation of measurement errors (Davies et al., 1999; Newton and Shaw, 2014; Sinclair and Lau, 2018). However, a challenging trade-off, known as the attenuation paradox (Clifton, 2020; Loevinger, 1954; Williams and Zimmerman, 1982), arises in maintaining both high validity and reliability. Broadening the scope of measurement constructs for greater validity can introduce measurement errors that compromises test reliability (Clifton 2020).

The history of second language testing, since the 1960s, has been characterised by ongoing debates regarding issues of validity and reliability. Carroll (1961) notably categorises language testing tasks into two main types: discrete-point tasks, which focus on language components like vocabulary and grammar, and integrative tasks, which require multiple skills integration in formats such as cloze, dictation, oral interviews, and essay writing. The post-1960s era witnessed the dominance of psychometric language testing, emphasising test reliability through easily replicable items like multiple-choice questions and vocabulary and grammar assessments (Spolsky 1995).

In the 2000s, language testing evolved, with the internet based TOEFL iBT test introducing productive skills like speaking and writing (Isbell and Kremmel, 2020). The COVID-19 pandemic disrupted in-person language proficiency tests
globally (Isbell and Kremmel, 2020), underscoring practicality as a vital consideration in test selection. In these uncertain times, at-home testing emerged as an alternative to traditional face-to-face formats. The Duolingo English Test (DET), an online, computer-based exam, gained prominence as a flexible option (Isbell and Kremmel, 2020; Wagner, 2020). Despite initial scepticism, DET has evolved and undergone validation studies to meet high standards of testing validity (Wagner, 2020; Wagner and Kunnan, 2015). As a post-entry language assessment, DET can reduce the incentive for intensive test preparation, preventing negative washback effects (Read, 2015). DET offers diagnostic benefits and enhances security measures, minimising the risk of malpractice and cheating (Isbell & Kremmel, 2020). Since the Covid-19 pandemic, the DET addresses accessibility issues to language testing services and accurately measures English proficiency levels for both EMI and VMI university-level programmes.

All in all, the use of DET offers a balance between practicality, security, and measurement constructs in language assessment.

2.3.4 Language proficiency outcome in EMI research

This section explores and evaluates the latest findings in the extant literature on the English language proficiency gains in EMI. Previous studies explore a diversity of research topics and employ different methodologies to research EMI-related language proficiency.

Huang & Jhuang (2015) conducted a large-scale qualitative case study to examine the experiences of EMI instructors and students in Taiwan. Two types of EMI programmes were offered to students including selective EMI courses and a full immersion programme. Data was collected from monthly classroom observations and semi-structured interviews with eleven students in two academic years from 2010 to 2012. Huang & Jhuang (2015) found that the EMI teaching in both selective and immersive EMI lessons focused on the content rather than the language, in which the latter was covered in incidental teaching or corrective feedback. Furthermore, students reported difficulties in content comprehension and utilising learning opportunities in class due to their perceived limited English skills. In-class language support offer by the teacher and mentoring from more capable peers proved to help weaker students to catch up and improve their self-confidence. Huang and Jhuang (2015) identified a gap in EMI research on student agency and provided a rich, observational, and longitudinal study to unpack the complexities of
what and how students learn content in different EMI contexts (partially selective and fully immersive). The results emphasise that students’ academic struggles in EMI courses were not all language-related but other individual and contextual factors such as student’s agency, cognitive engagement and institutional support played a significant role in students’ learning of both language and content (Huang & Jhuang, 2015). During the early stage of EMI development, using qualitative data offers exploratory insights for EMI researchers. However, as EMI courses have grown exponentially in their scope during the recent years (as outlined in Section 1.1.2), it has become difficult to draw any comparable evidence for other contexts, using the qualitative evidence alone (Macaro et al., 2018).

Mixed-methods design allows comparability and flexibility for EMI researchers. In Taiwan, EMI language outcomes are measured through both English test scores and perceptional surveys (Yang, 2015). Taiwanese students reported doubts about their English skills whereas the test results revealed a significant improvement in students’ English scores. Thus, a gap between students' perceptions and their actual progress in English proficiency is revealed (Yang, 2015) through this approach. One potential limitation of Yang (2015)'s study is the relatively short span of observation – which only lasted for 3 months into students’ EMI participation. In Spain, EMI learning is found to improve students’ accuracy whereas no significant difference is made on students’ lexical diversity and complexity during the same period (Vidal and Jarvis, 2020). However, the observed gains in writing skills should be interpreted with caution as the study does not consider students' language entry levels, and other social, educational background information that could also have confounded the observed language gains.

Aguilar & Muñoz (2014) employ the same pre- and post-test design as Tai (2015) but focus differently on learners’ gains in listening and grammar skills in a CLIL programme. A statistically significant improvement in listening skills is recorded but not in grammar test scores. The entry proficiency level of learners is considered, and the analysis shows that less-proficient students obtained higher gains in listening and grammar skills more than already-proficient ones. Shifting the focus beyond the productive-receptive spectrum, Taguchi (2014) explores a different component of English skills in pragmatic competence of EMI. This study uses a multimethod qualitative design including interviews, classroom observations and learning journal analysis. Findings demonstrate EMI students made more progress in informal than formal expressive skills, arguably through socio-cultural language use in EMI communicative contexts. The evidence from Aguilar & Munoz (2014) and
Taguchi (2014) suggests that different aspects of learners’ English skills can vary at different rates under effects of the EMI regime, highly relative to the social, individual factors of EMI participants.

Rogier (2012) conducted one of the first research studies in this field at an EMI university in the United Arab Emirates. Rogier’s quantitative findings demonstrated that there was only a relative minimum increase in English proficiency after such a long period as a four-year program. Qualitative evidence also shows a general positive attitude among students towards the effects of EMI on students’ English abilities, contrasting with the expressed views in other research (Hu & Wu 2020; Jiang & Zhang 2019; Chapple 2015; Huang & Jhuang 2015; Yang 2015).

Whilst Rogier (2012) presents a much more sophisticated design than existing studies (such as Hu & Wu 2020; Jiang & Zhang 2019; Chapple 2015; Huang & Jhuang 2015; Yang 2015) in terms of longer longitudinal research, robust data triangulation, and contextualisation of EMI programme, a number of limitations remain. First, the research did not account for students’ social and educational backgrounds when interpreting the score gains. These confounding variables are inherently present within each EMI participant before and during their 4-year EMI programme, therefore their contributions to the results should have been taken into account in the discussion section. Second, as the study measured score changes within the same cohort before and after their 4-year EMI participation, there is no direct non-EMI group in the same period to serve as a baseline for comparison. At best, the findings can only shed light on the score differences among students who receive the same EMI treatment, leaving the core questions as to whether EMI students improved their English skills more than those without EMI, and if so, by how much, unanswered.

Lei & Hu (2014) focus on language impacts of EMI, using English test scores, perception questionnaire and interviews with students. The study includes both EMI and its parallel Chinese as First Language Medium Instruction (CMI) programmes for a cross-sectional comparison. In sharp contrast to Rogier (2012), Lei & Hu (2014) did not find any statistically significant improvement in English proficiency scores for EMI students compared to CMI students. Mixed attitudes were expressed regarding the attitudinal effects of EMI towards students’ English learning motivation and English use. Results from multivariate regression analysis found prior English proficiency to be the strongest predictor of subsequent English exam scores, which reaffirms the important need to account for students’ linguistic and educational backgrounds in interpreting the findings. However, unlike Rogier (2012), this study
only consists of one round of data collection in the second year of the study programmes, for which no time-series changes in terms of students’ English proficiency scores can be ascertained. As Lei & Hu (2014) opt for using the national high-stake English test only used in China as a measure of English proficiency, more details about the test validity and reliability could have been included to strengthen the findings.

Yuksel et al. (2021) present another relevant research that investigates whether English proficiency increases over time through EMI participation in a Turkish university. This is combined with another aim to explore the links between English proficiency gains and EMI academic success. This study focuses on the final years of studies therefore can complement Lei & Hu (2014) that only investigates the early stage of EMI participation. The choice of timescale in EMI research cannot be underestimated as studies that are conducted at dissimilar time intervals seem to report different results. Previous studies that show negative language impacts of EMI are evident during the first two years, whereas more positive score gains in English proficiency materialise in the later stage of EMI learning (Yuksel et al. 2021; Rogier 2012). This difference in students’ performance can be attributed to ‘an adjustment period’ when students transitioned from L1 MOI secondary school to EMI higher education level (Nurshatayeva & Page 2020).

Yuksel et al. (2021) focus on the disciplinary difference of EMI programmes and the links between English proficiency and academic achievement. At this Turkish university, EMI is delivered in a hybrid model in which students are obliged to study both Turkish Medium Instruction (TMI) subjects and EMI subjects throughout their 4 years of studies. Findings report a statistically significant improvement in English proficiency of both subjects and this improvement forms the strongest predictor for academic outcomes over a 4-year period. Given the multilingual nature of EMI in this study’s context, the analysis would have been fuller had the effects of TMI also been accounted for in term of linguistic and academic score changes. However, Yuksel et al., (2021)’s study lacks an inclusion of a control group for which no comparison with a non-EMI programme can be drawn and this is why my study sets out to compare EMI with local language courses.

Čakarun & Drljača Margić (2021) compare the score differences between EMI and non-EMI students for the same Business degree programme at a Croatian university. A mixed-method approach is employed to include test scores from three different English tests, English self-efficacy questionnaires and follow-up interviews with students over a 2-year period. Results demonstrate that non-EMI students have
progressed better than EMI counterparts in general English skills and English self-efficacy beliefs. Both groups show a similarly significant improvement in Business English after two years of studies. The findings in Croatia are in line with reports in China (G. Hu & Lei, 2014), yet contradictory to evidence in Taiwan, Turkey and the UAE (Yang, 2015, Yuksel et al., 2021, and Rogier, 2012).

In Čakarun & Drljača Margić (2021)’s study, a non-EMI group is included for inter-group comparison. However, the number of EMI students is much lower than that of non-EMI students (264 non-EMI and only 58 EMI students in total), causing an under-representation of EMI students in the total participant sample. A more balanced sampling approach could have benefitted the data quality and research results.

In summary, research on EMI language outcomes varies in its findings across EMI contexts. Potential explanations for these variations include the contextual differences in which EMI operates, the time windows during which language outcomes are observed and the methodological choice of EMI researchers. A research gap remains on the comparative, longitudinal evidence of EMI language change at the later stage of EMI involvement, especially in under-explored context like Vietnam.

2.4 Understanding content learning

The following section provides a synopsis and critiques of key learning and assessment theories with a focus on the social constructivist school of thought. In doing so, I aim establish a theoretical understanding for empirically examining the impacts of EMI participation on students’ learning of academic content in a higher education context.

2.4.1 Definitions

The desire to learn is an essential part of human behaviour, but learning remains a complex process to define (Kobayashi, Ravaiolì, Baranès, Woodford & Gottlieb 2019). Various theories have attempted to explain how and why we learn.

The behaviourist theory proposes the concept of conditioning and the role of external factors as crucial factors in shaping humans’ learning behaviour (Schunk 2012). According to behaviourism, learning is a process of forming associations between specific stimuli and corresponding responses (Morris, 2014). As Skinner put it, learning is ‘essentially the reassociation of responses in a complex situation’
One crucial aspect of this theory is the notion that factors influencing learning include an individual’s developmental status and their history of reinforcement (Skinner 2014). For example, the responses the learner makes in each situation are influenced by what they have been rewarded or reinforced for doing in the past. As a result, practice plays a key role in the learning process as repetition helps strengthen and solidify the learned responses (Schunk 2012).

However, it is important to note that behaviourism has its own limitations. One notable drawback of the theory is its exclusive focus on explaining learning in terms of environmental events (Stewart 2012). This largely disregards the internal mental processes of learners, such as cognitive processes and emotions, which are now recognised as vital elements in explaining the acquisition, maintenance, and generalization of behaviours. Additionally, behaviourism’s narrow focus on observable behaviours may not fully capture the complexities of human learning, which often involves abstract thinking, problem-solving and creativity (Biggs, 2003; Bloom, 1956).

Alternatively, the cognitivist theory focuses on the intricate processes that occur within the brain to understand how learning takes place (Byrnes and Fox, 1998). This theory is deeply rooted in the cognitive psychology and neuroscience fields. Cognitivists posit that learning involves the formation and strengthening of neural connections, known as synapses (Byrnes and Fox, 1998; Nagowah and Nagowah, 2009; Schunk, 2012). This process is referred to as consolidation. When individuals learn new information or skills, their brains adapt by establishing and reinforcing these neural connections (Jensen 2005). Cognitivism emphasises the critical importance of early childhood in shaping neural connections. During early brain development, rich environmental experiences and emotional bonding play a vital role in establishing neural pathways and cognitive foundations (Ackerman, 1992; Byrnes and Fox, 1998; Jensen, 2005). Factors such as genetics, environmental stimuli, nutrition, and exposure to substances can influence brain development and affect the learning process (Schunk 2012). However, cognitivism does have its limitations. It tends to heavily focus on the individual’s internal cognitive processes and the role of the brain, often to the exclusion of external factors (Nagowah and Nagowah, 2009). This perspective may downplay the significance of social influence, cultural context, and the role of instructors in learning. As an early childhood theory, cognitivism provides limited insights into learning that occurs at
more advanced stages of development, such as higher education or adult learning, where social and contextual factors become important in understanding the learning process.

Finally, social constructivism offers a response to the cognitivist and behaviourist theories (Nagowah and Nagowah, 2009). At its core, social constructivism posits that cognitive processes are situated within both the physical and social contexts of the learner (Wells 2000). This theory underscores that learning is not a solitary, internal process but one deeply intertwined with the surrounding environment, both socially and physically (Nagowah and Nagowah, 2009; Narayan et al., 2013). A prominent proponent of this theory includes Lev Vygotsky, whose socio-cultural theory places significant emphasis on the social environment as a facilitator of development and learning (Vygotsky 1978). This influence occurs through various tools and elements, including cultural objects, language, symbols, and social institutions (Eun 2019; Vygotsky 1978). These elements collectively serve as the scaffolding for knowledge acquisition. Learning, in essence, becomes a socially constructed process, which happens through interactions with others, guided by the shared symbols, language, and cultural artifacts within a specific social context.

Social constructivism complements behaviourism and cognitivism by offering a more holistic view of learning. It bridges the gap between internal cognitive structures and external reality by making both relevant to the learning process (Nagowah and Nagowah, 2009; Stewart, 2012). This perspective places the role of learners at the centre stage, emphasising their active engagement in constructing their understanding of knowledge and skills (Freire 1996). It recognises that individuals are not passive recipients of knowledge but active participants who co-create meaning through social interactions (Eun 2019; Wells 2000). While social constructivism offers valuable insights into the dynamic and contextual nature of learning, it is not without its criticisms and limitations. Questions may arise regarding the role of experts or authorities in guiding learning within a social constructivist framework (Schunk 2012). The emphasis on collaborative construction of knowledge may sometimes neglect the expertise that individuals or institutions can provide.

While acknowledging criticisms, social constructivism provides a rich framework for understanding how individuals actively engage with their environment and peers to construct their understanding of the world. This study embraces the
social constructivist view of learning, recognising the intertwined relationship between cognitive processes and the social context, which underscores the dynamic, contextual, and subjective nature of knowledge and learning.

**2.4.2 Constructivist content learning**

EMI also aims to provide participants with academic content learning (Bälter, Kann, Mutimukwe & Malmström 2023; Lasagabaster 2022; Dafouz, Camacho & Urquia 2014). In the next section, I draw on social constructivist theory to illustrate the learning process and its assessment.

**Socio-cultural context of learning**

The socio-cultural context of learning, as emphasised by Vygotsky (1978) underscores the significance of the interaction among interpersonal (social), cultural-historical, and individual factors in human development. Learning and development are inherently linked to the context in which they occur (Eun, 2019). Learners exist within social and cultural contexts that profoundly shape their comprehension of the world (Vygotsky, 1978; Vygotsky & Cole, 1978; Wells, 2000). These contexts serve as the backdrop against which individuals engage in interactions with others, partake in collaborative activities, and negotiate meaning. The way learners engage with their surroundings, including people, objects (known as cultural tools), and institutions, plays a transformative role in shaping their thinking processes. The social environment exerts its influence on cognition through the utilisation of cultural artifacts, language, and social institutions (Vygotsky, 1978).

This study, centred on Vietnamese EMI higher education, necessitates a consideration of the socio-cultural context, an aspect that has been relatively underexplored in existing research (Luu et al., 2023). As discussed in section 1.2, the development of EMI programmes in Vietnamese higher education is deeply influenced by the country's cultural-historical heritage, marked by Confucianism, its economic transformations, and the government's pursuit of internationalisation (Le Ha & Ngoc, 2020). This context has led to the emergence of diverse EMI program types (Nguyen et al., 2017). Recognising these dynamics is vital for grasping the intricacies of EMI implementation and its impact on the learning experiences of its participants (Nghia & Tran, 2020; Tran & Marginson, 2018).
Prior Knowledge and Schema

Social constructivist theory emphasises the role of prior knowledge and schema in building academic understanding (Hmelo-Silver, Duncan & Chinn 2007; Ackermann 2001). When learners enter an educational context, they do not arrive as blank slates; instead, they bring with them a wealth of previous experiences, knowledge, and mental frameworks. For instance, consider an English Medium Instruction (EMI) student from a non-English speaking background who is studying biology in English. Their pre-existing knowledge of biology concepts and terminology in their native language serves as the foundation upon which they build their understanding of these concepts in English. This process of connecting new information with their existing schema allows for meaningful learning. As learners assimilate new information into their existing cognitive structures, their understanding of the subject matter deepens (Ackermann, 2001; Hmelo-Silver et al., 2007). In the EMI context, an EMI student studying history in English refines their existing knowledge of historical events and simultaneously expands their vocabulary in both history and the English language. Ackermann (2001) and Mayer (2005) underscore the critical role of prior knowledge in constructive learning. It is through this foundation of prior knowledge that learners can make connections with new information. Without this base of prior knowledge, learners may encounter difficulties in establishing meaningful links with new content.

In this study, I look at the potential influence of students’ existing knowledge on the subject matter and students’ prior level of English proficiency in mediating students’ outcomes in English proficiency as well as content learning over time. The prior knowledge factor can offer some explanatory power to the change in students’ learning of both language and content.

Zone of Proximal Development

The concept of the Zone of Proximal Development (ZPD), introduced by Vygotsky, plays a pivotal role in explaining learning according to the social constructivist principles. Vygotsky defines the ZPD as ‘the distance between the actual developmental level, as determined by independent problem-solving, and the level of potential development, as determined through problem-solving under guidance or collaboration with more knowledgeable peers’ (Vygotsky, 1978, p.86). The ZPD
represents the space between what learners can achieve independently and what they can accomplish with guidance or collaboration. ZPD presents a critical zone where learning is most fruitful, as learners are challenged while building upon their existing knowledge. Figure 1 demonstrates the Zone of Proximal Development (Broek, 2012, p.6).

![Figure 1](graphical_illustration_zpd.png)

**Figure 1** Graphical illustration of the Zone of Proximal Development

(adapted from Broek, 2012, p.6)

The ZPD signifies a student’s academic readiness and intellectual level within a specific domain (Bredo, 1997) and aligns closely with the idea of collective activity (Bruner, 1984). It involves a collaborative effort between the learner and a teacher or more knowledgeable peers, tackling tasks that the learner may not be able to manage independently. In the EMI context, cognitive transformation occurs as teachers and learners share cultural tools, and this interaction contributes to cognitive growth when internalised by the learner (Cobb, 1994). However, it is crucial to note that learners do not passively absorb cultural knowledge during these interactions; instead, they actively construct meaning by integrating their contextual experiences and appropriating cultural tools to make their own understanding of the new concepts. Using ZPD as a theoretical blueprint in the Vietnamese EMI context can capture a rich interplay between learners, educators, peers, and the cultural-historical backdrop, fostering profound cognitive development.

**Language scaffolding**

Within the framework of social constructivist learning, language scaffolding emerges as a pivotal element in shaping learners’ subject comprehension. Language takes
on a dual role as both a crucial means of communication and a tool for comprehending complex concepts (Vygotsky, 1978, 2012; Wells 2000). Language scaffolding is essentially a pedagogical approach that acknowledges that learners are not passive recipients of knowledge but active participants in their own learning journey. It is often recognised that learners require verbal support and guidance as they grapple with new and challenging concepts. Language scaffolding serves several crucial functions: Initially, the teacher or more knowledgeable peers take on a significant role in providing support to learners. This support can come in various forms, such as explanations, demonstrations, or hints (Hmelo-Silver et al. 2007; Ackermann 2001). Language scaffolding utilises language as a tool for learning. It involves articulating rules, procedures, and strategies that enhance a student’s grasp of a subject or task. By offering this support, scaffolding extends the learner's capabilities beyond their current level of understanding (Schunk 2012). Scaffolding allows them to access and engage with aspects of the topic that would otherwise be beyond their reach. It breaks down intricate tasks into manageable components, facilitating mastery of the subject matter. Language scaffolding also interacts with other elements of social constructivist theory, such as the socio-cultural context that shapes the learning environment and the prior knowledge and schema that learners bring to the table (Ackermann, 2001).

In summary, social constructivist theory emphasises the intricate interplay of these mechanisms within the learning process. The socio-cultural context shapes the learning environment, while language scaffolding fosters interaction. The ZPD guides instructional design, and prior knowledge and schema lay the foundation for understanding complex concepts. A deep understanding of these mechanisms provides valuable insights into how individuals actively engage with and construct knowledge within their social and cultural contexts, particularly within the context of EMI learning at Vietnamese universities.

2.4.3 Educational assessment approaches
Educational assessment plays a pivotal role in evaluating learners' progress toward educational goals, identifying areas for improvement, and ensuring program quality (Koretz, 2008; Newton, 2007). In the context of the social constructivist theory, which emphasises learning as a collaborative and reflective process, it is essential to explore how learning can be assessed effectively. Three primary methods for
approximating learning within this framework are self-assessment, formative assessment, and summative assessment (Newton, 2007).

Self-assessment involves learners critically reflecting on their performance throughout the learning process (Andrade & Valtcheva 2009; Heritage 2009). This learner-centric approach enables students to gain insights into their strengths and weaknesses during their educational journey (Harlen 2006). While self-assessment may appear to be an individualised process, the outcomes can be shared selectively within a trusted learning community to facilitate further development (Andrade & Valtcheva, 2009; Black & Wiliam, 2010; Heritage, 2009). This ecosystem begins with setting clear learning objectives, followed by ongoing reflections on performance and expectations for future learning steps (Black & Wiliam, 2010; Heritage, 2009). In this study, a self-assessed questionnaire on English proficiency and subject understanding is employed to gauge students' perceived improvement within both instructional medium programmes.

Formative assessment, on the other hand, is a low stakes testing method focused on tracking progress and identifying areas for improvement (Black & Wiliam, 2009; Koretz, 2008). It serves as ‘assessment for learning’ by providing learners with feedback, often derived from mock exam scores or performance feedback reports (Black & Wiliam, 2009; Harlen, 2006). Unlike self-assessment, formative assessment fosters communication between learners and instructors, enabling detailed discussions about performance and guidance toward meeting course requirements (Sadler, 2013).

Summative assessment, conversely, constitutes a high-stakes, large-scale testing method designed to qualify and report learners’ achievements at the culmination of a study program (Black & Wiliam, 2010; Harlen, 2006; Stobart, 2008). The current educational landscape, characterized as the era of ‘New Taylorism’ emphasises standardised testing at various stages, from university admission to exit examinations (Au, 2011). This trend is driven by the growing need for accountability and uniformity in education (McNeil, 2013). Nevertheless, widespread high-stakes testing has faced criticism due to its potential to narrow curriculum focus to match test content—a phenomenon known as the ‘washback effect’ (Au, 2011). However, at the policy level, summative assessment remains vital for evaluating learning, providing evidence of student qualifications, teacher effectiveness, and school accountability (Stobart, 2008).
In this research, students' end-of-year GPA scores and university admission grades (both summative) serve as additional data sources to measure achievement and progression in both instructional medium programmes. Taken together, the combination of self-assessment questionnaires and GPA performance data ensures a comprehensive evaluation of learning effectiveness within the social constructivist framework.

2.4.4 Content learning outcome in EMI research

This section reviews pertinent literature on the effects of EMI participation on student content learning. Researchers from diverse contexts and disciplines have shown a significant interest in the teaching of subject-specific content in English as a non-native language in tertiary education (Lasagabaster 2022; Altbach, Reisberg & Rumbley 2019; Brown 2017). Current research on English Medium Instruction (EMI) programmes measures evidence of content learning through students' exam scores, comprehension of disciplinary lectures, and English Proficiency for Specific Purposes scores (Rose, Curle, Aizawa & Thompson 2019; Thompson, Aizawa, Curle & Rose 2019; Xie & Curle 2019; Dafouz et al. 2014). Recent findings emphasise the strong link between academic English proficiency and content learning in EMI courses (Rose, Curle, et al. 2019; Phakiti, Hirsh & Woodrow 2013; Cho 2012). A solid foundation in English language proficiency and prior subject matter preparation can predict academic success in EMI courses (Thompson et al. 2019; Xie & Curle 2019). However, there remains a significant knowledge gap regarding subject understanding and learning outcomes in EMI programmes (Macaro et al. 2018). Particularly, there is a scarcity of studies comparing the measurable learning outcomes between EMI and local language medium instruction (Dafouz et al. 2014; Joe & Lee 2013). So far, most studies rely on self-reported academic attainment from students (Lasagabaster, 2022; Macaro, 2018); there is a need for quantified evidence in students' learning levels across both instructional media (English and L1). Below, key studies that have sought to understand the extent to which students learn content in EMI contexts are reviewed in depth.

Framing content learning as students' comprehension of lectures, Chuang (2015) adopts a sceptical stance on EMI's content learning. This study introduces an innovative action research design to explore the potential benefits of a collaborative pedagogical model within an EMI course in Taiwan. The investigation centres on assessing the perceived effectiveness of this novel approach in enhancing subject understanding. Data collection involves 42 students' evaluation
forms at the course’s conclusion. The findings indicate a positive attitude among students towards the impact of EMI. However, a notable limitation emerges: the elective nature of the EMI course might lead to a selection bias, as academically inclined students more likely participate, potentially affecting the study's internal validity and overall outcomes. While pioneering the use of action research in EMI scholarship, Chuang’s study underscores the significance of addressing potential biases to ensure accurate interpretations of the results.

In a Korean EMI context, the efficacy of EMI courses is investigated by Joe & Lee (2013) with a particular focus on students' comprehension and satisfaction levels. The study employs a test and retest design to evaluate students' knowledge retention following lectures delivered in both Korean and English languages. The academic content is deliberately kept consistent, and instruction is provided by the same lecturer. Joe & Lee (2013) do not identify any statistically significant impact of EMI on students' understanding of their lectures. Moreover, the study highlights doubts expressed by students regarding the exclusive use of English in EMI delivery. An important aspect of Joe & Lee (2013)'s study is its exploration of EMI within a highly technical subject, Medicine, when compared to the first language medium learning. Despite this contribution, certain limitations are evident. The data collection approach, which records students' performance during a three-hour class at a single point in time, cannot fully capture the overall learning process. The spontaneous nature of the test raises concerns about participants' altered behaviour, potentially compromising the study's internal validity. Therefore, while shedding light on the complexities of EMI implementation, Joe & Lee (2013) emphasise the need for more comprehensive and methodologically robust investigations into the effects of EMI on student comprehension and language use, such as longitudinal changes in students’ academic performance and attitudes.

Nurshatayeva & Page (2020) employ a similar methodological framework to examine the effects of English-Medium Instruction (EMI) programmes. Utilising a difference-in-difference analysis, the study uncovers a notable decrease in students' GPAs and an increased incidence of failed course credits following the transition to English-only instruction programmes. This adverse impact is particularly pronounced in the early stages of the transition, with indications that the effects may diminish over time. The research design stands out for its methodological sophistication, utilising six cohorts of student data (N = 2884) collected over a five-year follow-up period. Rigorous controls for background and confounding variables, coupled with a meticulous consideration of potential threats to research validity,
contribute to the robustness of the analysis. A significant finding of the study is the identification of a distinctive 'saw-tooth pattern' in EMI delivery, characterized by an initial decline in students' academic progress, followed by subsequent recovery across cohorts. However, the study's focus on a specific subject (Computer Science) and a particular university type (selective, western-oriented, and well-resourced) raises questions about the generalizability of the findings. Notably, the research sample primarily includes academically capable and socio-economically advantaged participants, potentially limiting the representativeness of the results. The study's exclusive focus on a post-Soviet monolingual country suggests unique implications that may not readily extend to other contexts of EMI. As a result, while shedding light on the intricacies of EMI implementation, Nurshatayeva & Page (2020) emphasises the need for caution when extrapolating findings to broader EMI scenarios.

In Europe, experimental research takes centre stage in EMI studies across Austria, France, and the Netherlands (Tatzl & Messnarz, 2013, Roussel et al., 2017, Vinke, 1995). Roussel et al. (2017) engages in cross-disciplinary comparison between Law and Computing, whereas Tatzl & Messnarz (2013) and Vinke (1995) concentrate on specific subjects - Physics and Engineering respectively. Drawing from the 'cognitive load' theory, Roussel et al., (2017) divides the knowledge acquisition process into biologically primary and secondary brain functions. Findings suggest cognitive constraints on 'biologically second skills'. This prompts consideration for English support programmes during EMI implementation. However, the narrow application of cognitive load theory raises questions about its validity, limiting learning to text recital and retrieval, and overlooking socio-cultural and disciplinary dimensions of knowledge production.

Tatzl & Messnarz (2013) takes a pragmatic approach by evaluating problem-solving skills in a Physics undergraduate program. This Austrian study divides 96 mixed-year students into German and English language test groups, demonstrating that EMI students might not require additional time or language aids for test completion. It is worth noting that Tatzl & Messnarz (2013) lacks a working EMI programme, with participants currently enrolled in German Medium Instruction courses, thus precluding implications for EMI's learning effects.

Vinke (1995), structured as a doctoral thesis, compares Dutch Medium Instruction (DMI) and EMI groups' performance on a lecture comprehension test. The results reveal a moderate, negative effect of switching to English as an instructional language on lecture understanding. Despite this, no significant
differences emerge in students’ perceptions of their learning gains. These findings align with Nurshatayeva & Page (2020), suggesting an initial stabilization, followed by a decrease in student outcomes under EMI before potential improvements in later stages. Although comprehensive, Vinke (1995) would have benefitted from longitudinal measurements for a more complete understanding of EMI’s long-term effects. As the experimental approach gains traction in EMI research, the diversity of findings underscores the need for careful consideration of various factors when interpreting the implications for language instruction.

Ali (2021) conducts an ethnographic study on Omani students. Ali’s work emphasises the role of English preparedness in EMI learning, aligning with previous research by Lei & Hu (2014) and Yuksel et al. (2021). The potential drawbacks of exclusive English language use were reported by students struggling with linguistic challenges. While classroom observation proves valuable in capturing rich EMI data, this approach must be carefully executed to ensure data quality. Hu & Duan (2019) provide a blueprint for this, employing a well-validated Classroom Observation Scheme (COS) to analyse lessons in different mediums, reporting no significant effects on students’ answer complexity.

Changes in academic scores between EMI and local medium instruction students were also explored for a Finance and Accounting course in a Spanish EMI university (Dafouz & Camacho-Miñano, 2016). Whilst no statistically significant differences were found between EMI and Spanish-medium Instruction cohorts, significant gaps existed within the EMI group itself. Similarly, no statistically significant gaps were found in academic achievement for Business Studies between an EMI and L1 Turkish Medium Instruction group in Turkey (Zaif et al., 2017). Findings suggest that EMI does not disadvantage content learning when compared to L1 Medium of Instruction (L1 MOI). However, when controlling for the university entrance scores, the results reveal a strong, positive association between high entry performance and higher in-course results (Zaif et al., 2017). These findings open up the possibility that the pre-course factors such as the linguistic background of EMI students and the in-course support they received might have played a significant role in the attainment gap among EMI students. However, an inherent selection bias might exist in the study that students who are more academically capable are more like to choose EMI and therefore achieve higher throughout the course, compared to their non-EMI counterparts.
In terms of prediction studies, Xie & Curle (2019) and Rose et al. (2019) conclude from studies in China and Japan that prior English proficiency significantly predicts EMI academic success. However, when replicating the design in a Turkish context, Curle et al., (2020) show a more significant role of L1 academic success than General English proficiency. These studies explore various predictive variables for EMI success, encompassing students' perceived success, learning motivation, academic language skills, and general language skills.

Most recently, Bälter et al (2023) investigated the impact of EMI on students' academic performance in an online learning environment. The study uses an experimental design with 2,263 participants in a programming course, randomly assigning them to either an English-medium or Swedish-medium version of the course. The results indicate that EMI students answered significantly fewer test questions correctly and had a higher dropout rate compared to students in the Swedish-medium group. Therefore, the study concludes that EMI can have detrimental effects on students' academic performance in specific situations in online learning environments.

In summary, the topic of content learning EMI has been explored through a variety of research methods and designs, including action research, experimental research, ethnographic, interviews, surveys, and mixed-methods. Little consensus is reached over the effectiveness of EMI in maintaining student content learning. Collectively, the evidence from Europe, Western, and Eastern Asia seems to suggest mixed effects of EMI on content learning when compared to L1 MoI. There is evidence to suggest EMI might cause learning difficulties at an initial stage, yet these detrimental impacts do not last in the longer term, subject to students' pre-course academic and linguistic levels. However, more evidence from other emerging yet underexplored contexts such as Southeast Asia is needed to add nuance to the existing literature. By exploring the academic performance and content outcomes of students in both EMI and L1 MoI classrooms over one academic year from 2021 to 2022, this study examines the potential effects of EMI on students' subject understanding and compares it to the L1 medium of instruction.

2.5 Understanding self-efficacy

This section explores the literature around the definitions of self-efficacy and other similar constructs in the psychology of education field. It also examines how self-efficacy can be operationalised and measured in empirical research.
2.5.1 Definitions

Self-efficacy is rooted in the social cognitive theory that posits a close link between the individual behavioural constructs and the external surroundings. Bandura first described self-efficacy as in ‘what people think, believe, and feel affects how they behave’ (Bandura, 1986, p.25). In this regard, self-efficacy presents one’s perceived capabilities to bring out actions in response to a specific task and achieve outcomes (Bandura et al., 1999). Therefore, it is both a perception-based and context-bounded construct (Mercer, 2008).

It is important to make a distinction between self-efficacy and other related self-constructs such as self-belief, self-confidence, and self-esteem. Self-belief refers to one individual’s evaluations of themselves based on their accumulative personal experience relative to performance of other people in their cohort of comparison (Bandura et al., 1999; Thompson et al., 2019). In this sense, self-belief depicts a comparison between one’s performance against others whilst self-efficacy concerns with how well one does compared to the difficulty levels of a task (Mills et al., 2007). Assessment of self-beliefs involves generic statements on one’s competence such as ‘I am the best in my group at public speaking’ whilst self-efficacy items might be more context-specific such as ‘I can deliver an English speech at the national debating competition very well’. Self-confident is also another self-construct that refers to individuals’ abilities to manage anxiety and come across as enduring, calm, and stable in communicative expressions (Labrie & Clement, 1986). Self-confidence differs from self-efficacy in that the former presents a personal attribute that can be shaped by their prior exposure or training with the task whilst the latter reflect a cognitive judgement based on the perceived difficulty of the task and their resilience to accomplish it (Feltz & Öncü, 2014). Lastly, self-esteem is characterized by an individual’s evaluation of their self-worth (Rosenberg, 1965). Self-worth encompasses a complex socio-cultural value system of one’s own that outlines what’s deemed worthy and what’s not for their own reputation and imagery in society (Bandura et al., 1999). Therefore, self-esteem can be seen as an affective attribute about their perceived value on a self-worthiness scale.

2.5.2 Multi-facets of self-efficacy

This section explores the multifaceted nature of self-efficacy as a construct. Bandura, Freeman & Lightsey (1999) have suggested three dimensions of self-
efficacy construct as follows: first, mastery experiences, second, social modelling, and finally, verbal persuasion, each of which are explained in more depth below. These facets interact dynamically and play a significant role in shaping individuals' confidence and performance, particularly in language learning contexts such as EMI.

**Mastery experiences** serve as a key component in Bandura’s self-efficacy theory which involve individuals actively engaging in a task or activity and achieving success from performing the task (Bandura et al., 1999). These positive experiences are pivotal in shaping self-efficacy because they provide direct evidence and reaffirmation of one’s abilities. For example, when L2 English students successfully navigate English language tasks such as public speaking or business communication, they gain an enhanced sense of confidence and competence. Each successful interaction with the language serves as a building block for their self-efficacy beliefs. Mastery experience is the most influential predictor for academic achievements of mathematics and engineering subjects in primary and further education level (Joet, et al., 2011). Further application of mastery experience as a self-efficacy construct can be used in the context of EMI higher education learning.

**Social modelling** presents another important facet of self-efficacy in which individuals learn and develop behaviours, attitudes, and beliefs through observing and imitating the actions and experiences of their perceived role models (Bandura et al., 1999). It emphasises the role of social interactions and the influence of role models in shaping one's self-efficacy and behaviours. Social modelling occurs when individuals perceive similarities between themselves and those they observe, leading them to believe that they can achieve similar outcomes (Schunk 1989). In the context of language learning, students may observe peers who share similarities in language proficiency achieving success (Caprara et al. 2008). This observation leads them to believe that they too can achieve similar outcomes, positively influencing their self-efficacy. For example, an EMI student watches a classmate, who started with similar language skills, excel in academic writing. Witnessing this success inspires the observer to believe they can perform well in English writing tasks. While social modelling can be motivating, it may also lead to unhealthy competition and stress if individuals perceive themselves as constantly lagging their peers. Additionally, it may not account for individual differences and personal learning styles.

**Verbal persuasion** demonstrates another dimension of self-efficacy which refers to the impact of verbal feedback, encouragement, and guidance from external
sources on an individual's self-efficacy beliefs (Bandura et al., 1999). This feedback can come from peers, mentors, teachers, or role models and can either reinforce or challenge an individual's perception of their capabilities (Pajares & Usher, 2008). Positive verbal persuasion involves receiving messages that enhance self-belief, while negative feedback can lead to doubts in one's abilities (Wise & Trunnell, 2001). When students receive positive verbal feedback or encouragement regarding their language skills from peers, mentors, teachers, or role models, it can reinforce their belief in their capabilities. Conversely, negative feedback can undermine their self-efficacy. For example, an EMI student receives praise from their English instructor for a well-structured essay. This positive verbal reinforcement enhances their self-belief in their English writing skills. The effectiveness of verbal persuasion depends on the credibility and context of the source. Social persuasions may have minimal effects on shaping self-efficacy, compared to mastery experience and social modelling. Schunk (1989) cautioned that feedback should be designed holistically to support students' self-efficacy rather than undermine it. Effective feedback includes one that encourages growth mindset and collaboration among students.

In summary, self-efficacy is a multifaceted construct influenced by mastery experiences, social modelling, and verbal persuasion. These facets interact dynamically and play a significant role in shaping individuals' confidence and performance, particularly in language learning contexts such as EMI.

2.5.3 Measuring self-efficacy approaches

In assessing self-efficacy beliefs, several essential factors come into play. First, the development of a questionnaire scale must focus on items that genuinely capture self-efficacy beliefs, as opposed to conflating them with related constructs (Bandura et al., 1999). Suitable items should encompass defining characteristics of self-efficacy, such as being context-specific, task-oriented, and reflective of an individual's perceived capabilities (Bong & Skaalvik, 2003). Second, the phrasing of questionnaire items can significantly influence respondents' interpretations and, consequently, overall results (Bandura et al., 1999). In self-efficacy assessments, the questions should aim to gauge respondents' perceptions of their current ability to perform a task. Hence, items should ideally commence with the phrase 'I can,' rather than 'I will' or 'I used to.' This phrasing better aligns with the temporal aspect of the self-efficacy construct. Third, it is imperative that self-efficacy measurements...
avoid incorporating elements of social comparison, moral judgments of self-worth, or personal traits in social contexts. These aspects are more relevant to constructs like self-belief, self-esteem, and self-confidence (Kormos, Kiddle & Csizér 2011; Mercer 2008; Bong & Skaalvik 2003).

It is important to recognise that there's no one-size-fits-all template for self-efficacy questionnaires due to the context-dependent nature of this construct. Depending on the nature of the task of interest, there can be different types of self-efficacy beliefs. English self-efficacy beliefs refer to one’s expected English capability whilst academic self-efficacy beliefs are related to one’s perceived academic performance (Ngoc Truong & Wang, 2019; Phakiti et al., 2013; Shi, 2018). In content learning settings, self-efficacy beliefs remain instrumental in boosting students’ overall achievement (Chemers et al., 2001), especially in terms of learning engagement (Anam & Stracke, 2020; Stracke, 2016), persistence in the face of obstacles and challenges (Caprara et al., 2008) and self-regulatory strategies (Wong, 2005). In second language acquisition research, self-efficacy beliefs are found to be a powerful predictor of language proficiency gains (Ngoc Truong & Wang, 2019). Students who hold high perceptions of their English skills are more likely to outperform those who do not (Liem et al., 2008; Woodrow, 2011). Both English self-efficacy beliefs and academic self-efficacy beliefs are considered in this study.

Researchers have widely adapted various versions of self-efficacy questionnaires to align with the specific objectives of their studies. They have provided detailed explanations regarding the scale and measurement constructs (Ngoc Truong & Wang 2019; Kausar & Akhtar 2012; Caprara et al, 2008; Liem, Lau & Nie 2008). In line with this best practice, I have adapted an EMI-specific questionnaire which combines items from English self-efficacy and academic self-efficacy questionnaires in the current literature. Detail on the design of the self-efficacy questionnaire is provided in Chapter 5, Section 5.5.2.

2.5.4 Self-efficacy outcome in EMI research

This section reviews studies reporting findings on the relationship between EMI participation and self-efficacy enhancement. Self-efficacy manifests as a potent determinant of performance and achievement. As such it is an important concept to consider when researching learning gains. Self-efficacy encompasses domain-specific beliefs, such as English self-efficacy and academic self-efficacy, which are
linked to language and subject-specific competencies (Ngoc Truong & Wang, 2019; Phakiti et al., 2013). Across content learning and second language acquisition, self-efficacy contributes to engagement, persistence, and self-regulation (Anam & Stracke, 2020; Stracke, 2016; Caprara et al., 2008). Moreover, self-efficacy emerges as a predictor of language proficiency gains and overall academic success (Ngoc Truong & Wang, 2019; Liem et al., 2008; Woodrow, 2011).

Despite the relevance of self-efficacy across educational contexts, the literature on its effects within different instructional mediums remains limited. An initial investigation into this area was conducted by Lee & Lee (2018), utilising a perception-based questionnaire to examine the interplay between instructional languages and students’ English self-competence at a Korean university. Notably, Lee & Lee (2018) found that being an EMI student did not strongly correlate with levels of learning motivation and self-beliefs. However, when controlling for variables like learning motivation, strategies, and self-rated English abilities, the study revealed a more robust relationship between strategy utilization, self-beliefs, and intrinsic motivation (Lee & Lee, 2018).

In contrast, Kausar & Akhtar (2012) conducted a self-efficacy survey among EMI and Urdu Medium Instruction students at a Pakistani university. Kausar & Akhtar (2012) found that EMI students reported higher English self-efficacy compared to their counterparts instructed in Urdu language. Kausar & Akhtar (2012) concluded that EMI courses are associated with a positive formation of self-efficacy among participating students, compared to local language medium instruction courses. Similarly, in Hong Kong, Chao et al. (2019) explored the connections between self-efficacy and linguistic-academic achievements in a bilingual context (L1 Cantonese and L2 English). Their questionnaire-based study is of large scale and involved 1092 students (CMI = 402; EMI = 690). Findings from Chao et al. (2019) demonstrated that English self-efficacy beliefs significantly predicted students’ English and Chinese learning achievements, unlike L1 Chinese self-efficacy beliefs which did not predict the same learning gains in English.

However, due to the absence of regression analyses in the reviewed studies, it remains challenging to extrapolate the predictive influence of EMI participation on enhancing students’ English self-efficacy beliefs. Bridging this gap, Thompson et al. (2019) and Thompson et al. (2021) addressed the methodological limitations by employing multiple regression analyses encompassing a wide range of explanatory
variables for self-efficacy, including gender, study abroad experience, English and Math scores, and academic success grades. Their findings reaffirmed that students with stronger self-beliefs tend to exhibit increased engagement and higher achievement in EMI courses.

In summary, a notable gap remains regarding how the instructional medium contributes to the development of self-efficacy beliefs. To address this research gap, the current study aims to examine the impacts of EMI participation on students' English language self-efficacy beliefs, in terms of linguistic and academic self-efficacy beliefs, thereby extending the literature on the intricate relationship between medium of instruction and students' self-efficacy formation.

2.6 Understanding educational equity

Equity in higher education, particularly within the context of fee-paying English Medium Instruction (EMI) in developing countries like Vietnam, represent critical dimensions that require policy and academic attention. This section aims to dissect the existing research landscape on educational equity, scrutinise the determinants influencing these dynamics, and delve into the applicability of Bourdieu's theoretical framework in differentiating the often-overlooked nuances between students' backgrounds and their performance in higher education.

2.6.1 Definitions

Equity in higher education denotes the accessibility, participation, and outcomes of individuals based solely on their ability and academic efforts (Amaral, 2022; Marginson, 2011b). This definition emphasises that educational achievement should not be influenced by uncontrollable factors such as socio-economic status, residence, gender, age, or disability. Article 26, paragraph 1 of the Universal Declaration of Human Rights asserts that higher education should be equally accessible to all based on merit (United Nations General Assembly, 1948). Similarly, the World Declaration on Higher Education for the Twenty-First Century emphasises the rejection of discrimination in granting access to higher education based on factors that are beyond students' control (UNESCO, 1998).

Equality and equity are two interconnected but distinct concepts (Amaral, 2022). Equality involves equal rights and treatment for everyone, while equity extends beyond by incorporating needs-based support to level the educational playing field for disadvantaged groups (Amaral, 2022). Equity comprises fairness, ensuring that personal and social circumstances do not hinder educational potential,
and inclusion, guaranteeing all individuals can attain a basic standard of education (De Costa et al. 2021; Marginson 2011b).

Access and equity in higher education are influenced by a myriad of determinants across government, university, pre-university education, and student levels (Wanti, Wesselink, Biemans & Brok 2022). Government-level interventions, including policies supporting disadvantaged students, aim to enhance confidence, academic skills, and enforce compulsory education, while the opening of new universities and institutions seeks to broaden access to higher education (Balán 2020; Jerrim & Vignoles 2015; Clancy & Goastellec 2007; Ramsay 1994). University-level determinants encompass financial support, mentoring, and pathway programmes, alongside challenges such as uneven financial and institutional support, a difficult enrolment process, and unclear, low-quality communication (McCowan 2016; Wang & Shulruf 2013; Asplund, Adbelkarim & Skalli 2008). Additional university-level determinants, such as peer and lecturer support, the teaching of basic academic skills, and the availability of services and programs for students, contribute to a supportive educational environment. Conversely, challenges like low academic achievement, exclusion, invisibility, rejection, and departmental lack of support can perpetuate inequities (McCowan 2016). Pre-university education factors, such as the role of teachers, enrolment guidance from adults, and the high school selectiveness, significantly contribute to shaping students' perceptions and decisions (Kim 2012; Castro, Yamada Fukusaki & Arias 2011; Galindo-Rueda & Vignoles 2004). At the student level, family support, socioeconomic status (SES), parental education, and financial assistance from extended family play a positive role, while challenges like financial constraints, low motivation, low SES background, being the first in the family to attend university, and self-doubt can hinder equity (Leach 2013; Castro et al. 2011).

While economic and social determinants have received extensive attention, alternative perspectives challenging the conventional emphasis, such as cultural influences, institutional policies, and the role of meritocracy, require nuanced examination. The interconnected and sometimes contradictory nature of these determinants emphasises the need for careful consideration in understanding their collective impact on access and equity in higher education. In summary, a holistic and critical exploration of these determinants is essential for developing comprehensive strategies to address and rectify existing disparities in higher education.
Building upon the multifaceted determinants discussed, this study delves into the investigation of how students from diverse socio-economic and cultural backgrounds within an English Medium Instruction (EMI) setting may experience varying educational outcomes. In aligning with the identified determinants, the examination specifically focuses on potential inequities in accessing to and performance of the EMI programme in a Vietnamese university context. This includes a nuanced exploration of admission criteria, language proficiency requirements, and other financial barriers that may disproportionately affect specific student populations. Furthermore, the study acknowledges that disparities may extend beyond access, manifesting in variations in academic, linguistic, and affective performance among students from different backgrounds within the EMI programme. The ultimate goal of this research is to identify specific barriers within the EMI programme for distinct social, economic, or cultural groups. This insight aims to empower policymakers and scholars to design targeted interventions and provide equitable opportunities, thereby addressing the concerns raised in the broader context of access and equity in higher education. The study thus bridges the theoretical understanding of determinants with a practical exploration of their implications within the specific context of an EMI programme.

2.6.2 Bourdieu’s theory in this study

This section highlights the value of Bourdieusian sociology of education in providing conceptual tools to explicate disparities in economic, social, and cultural capital across stakeholder groups. The rise of knowledge-based economies and technological advancements has profound implications for higher education. Universities claim to equip students with transferable skills and global mobility, aligning with the competitive labour market's demands (Brennan, 2013; Brown, 2013). The internationalisation of higher education fosters collaboration, innovation, and growth among global universities (Brennan, 2013; Brown, 2013). Simultaneously, the swift commercialisation of tertiary education has exacerbated disparities in accessing internationalised learning and equity amongst disadvantaged groups of students (Jiang, 2008; McPhail & Rata, 2016; Robson & Wihlborg, 2019; Tran & Marginson, 2018). As such, empirical studies must be based on a theoretical framework that can incorporate different social and pedagogical values to evaluate findings. Such a lens elucidates the intricate interplay of structural forces, agency factors, and power dynamics that shape EMI practices, outcomes, and equity considerations.
Bourdieu's sociological framework offers a powerful lens to analyse educational phenomena within a broader socio-cultural, political, and economic context (Apple et al., 2009; Ballantine et al., 2021; Sever, 2012). This framework emphasises the importance of education as being deeply embedded in larger social structures. This chapter explores Bourdieu’s key concepts of social, economic, and cultural capital - and their relevance in understanding educational inequalities within the EMI setting.

Bourdieu’s theory introduces three forms of capital, including economic, social, and cultural capital (Bourdieu 1986). These forms of capital are resources that individuals and groups possess and leverage to gain advantages in society.

**Economic capital** refers to a person's financial resources, such as income, savings, and property (Bourdieu 1986). It can play a role in shaping educational outcomes as families with higher economic capital can invest more in their children's education. For example, they can afford private tutoring or extracurricular activities, which can enhance academic performance (Zhang & Wang, 2021). In the context of Vietnam, the EMI programme is considered a high-quality option but comes with higher tuition fees compared to the perceived standard-quality Vietnamese Medium Instruction (VMI). The high financial cost and entrance requirements mean that students enrolling in EMI courses have access to a higher level of economic capital.

**Social capital** refers to an individual's social networks, relationships, and connections (Bourdieu 1986). In the context of education, it can influence access to opportunities and information (Bourdieu 1986). Students from privileged backgrounds may have access to influential connections that can facilitate their educational journey (You & Hu, 2013). Additionally, Bourdieu’s concept of social capital, which pertains to membership in a socially exclusive group, is exemplified by the attendance of students at elite high schools. In the Vietnamese education system, specialised high schools (truong trung hoc pho thong chuyen) are designated publicly-funded institutions for high school students to enrol in highly selective programmes in natural sciences, social sciences, and foreign languages (Le Ha & Ngoc, 2020; London, 2006). Entrance to a specialised high school in Vietnam is test-based and extremely competitive (Dang, 2007). As such, attendance to these specialised high schools is often considered as an early-life opportunity to create social and educational bonds in Vietnamese society. Social relationships formed among those selective schoolers can be seen as a form valuable form of social capital affecting students’ success in later years.
Cultural capital encompasses knowledge, skills, and cultural resources that individuals acquire through socialisation (Bourdieu 1986). It includes language proficiency, familiarity with cultural norms, and exposure to valuable cultural experiences. Students with higher cultural capital may excel in educational systems that align with their cultural backgrounds (English & Bolton, 2016). Cultural capital, denoting symbolic dispositions associated with social class (Bourdieu, 1986; Edgerton & Roberts, 2014), can be observed in the practice of attending private English tuition among culturally affluent students. In numerous educational contexts in Asia, including Vietnam, the practice of enrolling in private English tuition serves as an institutionalised manifestation of cultural capital (Nguyen, Hafeez-Baig, Gururajan & Nguyen 2021). This entails students paying for private tutors and receiving personalised lessons to strengthen their English proficiency (Nguyen et al. 2021).

2.6.3 Bourdieusian theory in EMI research

A few studies rely on the Bourdieusian theory to explain the educational inequalities between EMI and non-EMI groups (Lueg, K. & Lueg, L. 2015; Sah & Karki, 2020). For example, Lueg & Lueg (2015) explore the relationship between social background, cultural capital, and the decision to choose EMI. They show that students from higher social strata are more likely to choose EMI, highlighting the potential for social inequality and the need for inclusive policies in higher educational settings in Europe. Sah & Karki (2020) examine the motivations behind implementing the EMI policy in low-resourced public schools in Nepal, showing that EMI is driven by aspirations for social and economic capital gains. Inadequate English proficiency among teachers and students and the influence of neoliberal ideologies have created comprehension issues and epistemic inequalities for linguistically minority students.

Nonetheless, there remains a scarcity of research applied to interpret research findings concerning students’ pre-existing backgrounds and the equitable absorption of EMI effects. Bourdieusian theory provides a framework to analyse and interpret social, economic, cultural capital, and cultural reproduction, as well as theoretical justifications for using different proxy measures in empirical studies. These measures, such as, household income, private English tuition, and selective school attendance, are popular to elucidate variations in academic outcomes.

In summary, a Bourdieusian lens offers a theoretical foundation to uncover the underlying mechanisms that contribute to disparities in educational outcomes. The question on why certain students excels in EMI programmes while others struggle can be conceptually explained by considering the influences of economic, social, and cultural capital on students’ differential levels of performance. This perspective highlights the need for policies that promote equity and inclusivity in education, particularly in EMI settings where social inequalities may be exacerbated (Lueg, K. & Lueg, L. 2015; Sah & Karki, 2020). This study embeds Bourdieu's theory in various stages, from the designing of the conceptual framework to the itemisation and implementation of the qualitative survey, which is detailed in Chapter 3, section 3.5.2.

2.7 Summary of research gaps

The literature review underscores four key notable research gaps in exploring the effectiveness of English-Medium Instruction (EMI).

First, there lacks empirical evidence on the actual effectiveness of EMI in enhancing English language skills, content learning and self-efficacy beliefs within the specific context of emerging market for English-taught education. Vietnam offers an excellent setting to fill in this gap with an increasing demand for EMI courses and pedagogical capacity from universities to supply. This study is the first longitudinal empirical investigation to track the performances of EMI students over time and observable differences over non-EMI counterparts. By looking at the change in differences, I demonstrate the effectiveness of EMI in Vietnam is not driven by time invariant factors associated with the students' background, highlighting the intrinsic values of EMI courses.

Second, due to its recent history of development in the context of internationalizing higher education, the EMI literature encounters a deficiency in defining crucial concepts such as language proficiency, content learning, self-efficacy, and equity. In response to this ambiguity, I employ insights from diverse disciplines, encompassing second language acquisition, learning theories, educational assessment, and psychology of education. This interdisciplinary approach justifies the operationalisation of key concepts within the study. By drawing on insights from
multiple fields, this research aims to bring clarity and consistency to the terminological landscape of EMI research. The cross-fertilisation of ideas from various disciplines enhances the robustness of the study and contributes to the establishment of terminological precision in key constructs within the EMI research domain.

Third, existing studies on the effects of EMI on students' critical self-construct, particularly self-efficacy beliefs, often use outdated questionnaires, that too focus on the English language acquisition rather than academic content learned. These questionnaires are not supported by validity tests and items are not contextualised to assess the content learning, which is part of the dual focus of EMI. To address this methodological gap in EMI research, I develop a self-efficacy questionnaire that is robust to various validity tests and customised to evaluate academic and English learning. Details on the construction of this EMI-specific self-efficacy questionnaire are given in Chapter 3, Section 3.5.2.

Finally, education equity remains an underexplored area of research in the literature amid its significance on EMI policy-making, research and practice. This study focuses on equity issues in EMI by utilising Bourdieu’s theory and his key concepts on cultural, social, and economic capital. In doing so, the findings can shed light on the potential disparities between students' backgrounds and their access to and performance of the EMI programme at a Vietnamese university. This inclusion of equity issues into EMI research agenda fills the knowledge gap and move forward the EMI literature in developing an equitable EMI education in Vietnam and other similar contexts.

2.8 Research questions and hypotheses

Having identified the current gaps in the education literature and discussing the pedagogical and economic motivations for understanding the effectiveness and equity of EMI on language proficiency, content learning, and self-efficacy in an emerging country context, I address the following research questions, sub-research questions and hypotheses.

Research Question 1 (Effectiveness of EMI)
What are the impacts of EMI on English proficiency, academic content learning, and self-efficacy on participating students compared to non-EMI students?
• RQ 1.1: What is the impact of EMI participation on **English proficiency** from Year 3 to Year 4, when compared to VMI participation in Vietnam?

• RQ 1.2: What is the impact of EMI participation on **academic learning** from Year 3 to Year 4, when compared to VMI participation in Vietnam?

• RQ 1.3: What is the impact of EMI participation on **self-efficacy** from Year 3 to Year 4, when compared to VMI participation in Vietnam?

Within the Research Question 1, and the gaps identified in previous literature review, I formulate the first hypothesis of the study as follows:

H1: EMI participation does **not** adversely affect students’ English proficiency, content learning, and self-efficacy compared to L1 medium of instruction, in Vietnam.

**Research Question 2 (Equity of EMI Effectiveness)**

How do the impacts of EMI identified in Research Question 1 vary across students with diverse academic and socio-economic backgrounds?

• RQ 2.1: How does the effect of EMI on **language outcomes** vary across students with different levels of economic, social, and cultural capital?

• RQ 2.2: How does the effect of EMI on **academic learning** outcomes vary across students with different levels of economic, social, and cultural capital?

• RQ 2.3: How does the effect of EMI on **self-efficacy outcomes** vary across students with different levels of economic, social, and cultural capital?

Within the Research Question 2 and the Bourdieusian framework outlined in section 2.6.2, I formulate the second hypothesis of this study as follows:

H2: Students with **higher** social, economic, and cultural capital are more likely to achieve higher language proficiency, content learning, and self-efficacy outcomes in the EMI programme.

**Research Question 3 (Student Perception of EMI Effectiveness)**

How do students perceive the relationship between the medium of instruction and three outcomes: (i) English Proficiency, (ii) academic content learning, and (iii) self-efficacy?
• RQ 3.1: How do students perceive the relationship between medium of instruction and language proficiency gains?

• RQ 3.2: How do students perceive the relationship between medium of instruction and academic learning gains?

• RQ 3.3: How do students perceive the relationship between medium of instruction and self-efficacy gains?

I empirically and thematically approach the three research questions in the form of testable hypotheses and sub-questions based on the three outcomes (i) English Proficiency, (ii) academic content learning, and (iii) self-efficacy, respectively in Chapter 4, 5, and 6. The empirical analysis uses the data from Vietnam, an emerging country with potential expansion for EMI courses. I conduct a longitudinal study over a one-year interval from 2021 to 2022, at a leading Vietnamese university that offers an established EMI programme and a parallel VMI programme in International Business. More details about the research setting of the study are outlined in Chapter 3, Section 3.3. Using an equity-focused theoretical framework based on Bourdieu’s theory of capital, I also explore Research Question 2 from a theoretical perspective. The next Chapter 3 discusses in detail the methodology of this study.
Chapter 3 Methodology

3.1 Introduction

This chapter provides an overview of the research framework, methodological techniques and the rationales for the chosen empirical methodologies adopted in this research. This chapter starts by outlining the research paradigm that underpins the overarching direction of this study. The next section describes and discusses the strengths and limitations of the chosen research design. This is followed by a description of research methods and data analysis techniques used in the study. Finally, a discussion of ethics of this research is provided.

3.2 Research Philosophy

This section first outlines different research paradigms in the methodological literature, including positivism, interpretivism, and pragmatism. Next, I present justifications for the choice of pragmatism to be used in this study.

3.2.1 Research paradigms

The overarching goal of this thesis is to explore the effectiveness, equity and perceptions of English Medium Instruction on students’ language proficiency, content learning, and self-efficacy beliefs. Since the field of EMI research encompasses a vast range of disciplinary approaches and epistemological positions (Hultgren 2021), it is essential to be transparent about the key philosophical assumptions under which to formulate the research framework.

Research philosophy refers to one’s belief about the nature of knowledge and how data should be collected, analysed, and interpreted to make sense of a social phenomenon (Cohen, Manion & Morrison, 2017). Three main components of a research paradigm include ontology (what counts as knowledge?), epistemology (how can knowledge be gained?) and methodology (how should inquiry of knowledge proceed?) (Cohen et al., 2017; Schwandt, 2014). Paradigmatic thinking provides a fundamental understanding of the nature and purpose of knowledge and hence informs the selection of appropriate research methods to the enquiry process. Table 2 outlines a summary of the three main paradigms in terms of their ontological, epistemological, and methodological assumptions.
Positivism, interpretivism and pragmatism are the three main research paradigms in the social sciences research field. Positivists posit the premise that the ‘truth’ is universal and objective across the social world as well as the natural world (Cohen et al., 2017). This ‘truth’ is also deterministic in that causal links between events are to be uncovered through a scientific process of inquiry (Cohen et al., 2017). In conducting positivist-oriented research, quantitative methods such as numerical measurements, observational data and statistical analysis are employed to generate empirical evidence to determine the tenability of a proposed theory or

Table 2 Summary of research paradigms
(Adapted from Cohen et al., 2017)

<table>
<thead>
<tr>
<th>Paradigm</th>
<th>Ontology</th>
<th>Epistemology</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positivism</td>
<td>Determinism: the truth is universal, objective and causal links are to be uncovered.</td>
<td>Knowledge is determined and verified by observational data, empirical evidence and proof.</td>
<td>Quantitative methods such as numerical measurements, statistical analysis, experimental designs.</td>
</tr>
<tr>
<td>Interpretivism</td>
<td>Constructionism: meanings of realities are socially constructed and therefore there exist multiple interpretations of the truth.</td>
<td>Knowledge is gained through different social lens of the insider group members.</td>
<td>Qualitative methods such as grounded theory, interviews, ethnography and case study.</td>
</tr>
<tr>
<td>Pragmatism</td>
<td>Nature of reality depends on the purpose of the research questions. There can exist one reality or multiple realities in the social world.</td>
<td>Knowledge can be gained through a combination of methods that is best fitted to address the proposed research problem.</td>
<td>Mixed-methods that combine any of the qualitative and quantitative methods available.</td>
</tr>
</tbody>
</table>
hypothesis (Bryman 2004). Under positivism, research begins with a measurable sample of observations, but the findings should be generalizable to explain the wider phenomenon at large (Cohen et al., 2017). Nevertheless, positivism is challenged by its critiques for its outright rejection of metaphysics and possibilities of multiple interpretations of reality (Cohen et al., 2017). The diverse scope of social research might include complex and layered social problems that require a more context-situated and high-detailed approach (Cohen et al., 2017).

Interpretivism acknowledges the existence of a dynamic social world (Bryman, 2006; Cohen et al., 2017). According to interpretivists, meanings of reality are socially constructed and there exist different interpretations of knowledge depending on individual background, experience, and social identities (Bryman, 2004; Cohen et al., 2017). Interpretivist studies are thus more concerned with exploring the complexity of a social phenomenon and explaining the social world from different social lenses through qualitative methods such as grounded theory, interviews, or narrative research (Cohen et al., 2017). Nevertheless, the scope of interpretivist studies is confined only to the chosen context, and it is difficult to generalize the results to a wider context (Cohen et al., 2017).

In combining the strengths and minimizing the limitations of both positivism and interpretivism, Creswell & Creswell (2005) proposed the third approach called ‘pragmatism’ in which both qualitative and quantitative methods can be conveniently mixed to fit with the pragmatic purpose of research. By conducting research out of a paradigmatic purity, the researcher is enabled with a wider range of research tools whilst minimising the challenges to validity and reliability to which positivism and interpretivism are prone.

### 3.2.2 Pragmatism: a mixed-methods approach

This section explains justifications for adopting pragmatism in this study. First, the choice for pragmatism in this thesis is consistent with the growing pragmatic approach and methodological innovations in the EMI scholarship (Pun, Curle & Group 2022; Macaro et al. 2018). On the topic of evaluating EMI effectiveness, most available studies use self-assessed tools such as self-perception questionnaire of English proficiency and content learning, which has caused difficulties for subsequent research to compare and interpret their research findings. As a result, an inclusion of some standardised measures on EMI outcomes should provide generality benefits for future research. Nevertheless, due to the vastly diverse scope
of EMI implementation practice across countries and institutions, findings on EMI impacts should also be examined in consideration of the social context and the individual experiences within the educational programme of interest. A purely positivist stance may not provide a sufficient and in-depth understanding of the contextualised and individualised nature of the EMI experience of students in the chosen research setting. Both approaches would prove limited insights if adopted separately yet a combination of mixed methods under pragmatism allows the research to achieve its proposed aims.

Secondly and relatedly, adopting both positivist and interpretivist approaches enables me to answer all of the three research questions posed in the study, thereby providing a more holistic view of the EMI effectiveness. Research Question 1 of this study aims at measuring the longitudinal effects of English Medium Instruction on students’ language proficiency, content learning, and self-efficacy. Relatedly, Research Question 2 focuses on quantifying the differential levels of the identified effects among EMI participating students. To answer these two questions, a rigorous analysis setting with quantifiable measures is adopted. Explanatory variables include the medium of instruction (VMI and EMI) and social stratification factors measured by average monthly household income, gender, parents’ level of education, pre-university academic and linguistic backgrounds, and in-course private tuition time. The outcome variables consist of student learning outcomes, measured by English proficiency score, end-of-year average point academic (GPA), and self-efficacy scaled data. This quantification aligns with a positivist worldview, emphasising the use of quantitative methods and statistical tests to verify the hypothesised relationships between explanatory and outcome variables.

Having established the measurable strength of the relationship of interest, Research Question 3 asks how this relationship is perceived among the participating students. The interpretivist approach to this question is associated with identifying and interpreting students’ own perceptions and subjective experiences within their study programme. Because of the subjective nature of the students’ experience, the answers to this question cannot be reduced to one universal truth. To fully appreciate the complexity of students’ experiences, a qualitative approach that adopts semi-structured interviews, open-ended questionnaire and focus groups is a more suitable methodological choice. In this respect, knowledge is socially constructed through different interpretations by students from different social, linguistic, and academic backgrounds.
Inevitably, pragmatism is not without critiques. For example, Flick (2017) posits that the positivist worldview maintains a dominant position in the wider world of health and social sciences research and pragmatic studies tend to extend on positivism without being sufficiently explicit and reflexive on its own assumptions. Whilst this is a legitimate concern, it does not apply to the niche field of EMI research. The current dominant approach in the EMI literature remains qualitative and interpretivism. Despite growing interests in using quantitative and standardised tools, interpretivist studies remain the most used design in EMI scholarship, causing comparability issues across research findings (Macaro et al. 2018). Thus, the use of mixed-methods research is expected to contribute more nuance to the field. Without necessarily overlooking the fundamentalist debates about research paradigms in the methodology literature, this research prioritises to adopt a practical research strategy that allows it to fully explore the complex research problem of interest.

In summary, the research approach adopted in this study bridges the positivist focus on objective measures and the interpretivist emphasis on subjective experiences, aligning with a pragmatic philosophy that leverages the strengths of both perspectives for a holistic understanding of EMI effectiveness.

3.3 Research setting

The implementation of EMI programme is context-specific and vastly different across institutions and countries in the non-Anglophone world (Macaro et al. 2018). Attention to context allows for a case-to-case understanding and provides a basis for future comparative studies (Firestone, 1993; Yin, 2012). It is, thus, crucial for this study to provide a thorough description of the background details of the research setting under which the study was conducted.

The research site of this study was at a top-tier public university that specialises in international business in Ho Chi Minh City, the largest city in Vietnam. The university was founded in 1993, at the time when Vietnam underwent drastic economic and political reforms to open the global market. Since then, the university has developed from a specialised to a multidisciplinary institution, offering courses in International Business Economics, International Business Administration, International Finance and Banking, Logistics and Supply Chain, and Accounting and Audit. A total of more than 4000 students are currently enrolled at undergraduate
and taught postgraduate levels in which Vietnamese students are the predominant group that accounts for more than 99% of the sum enrolments. Whilst all of the courses are traditionally taught in the native Vietnamese language, the university has recently developed and offered a number of undergraduate courses taught in English (chuong trinh chat luong cao, literally translated as ‘high quality’ programmes’) for Business Studies, International Finance and Banking, and Logistics and Supply Chain. The university also plays a key role in internationalising higher education sector in Vietnam as it is actively engaged in international cooperation through student exchange programmes, and joint degrees with universities in the United Kingdom, the United States, Canada, and Japan.

The EMI and VMI courses have the same academic content delivered by the same content lectures, with two differences being the medium of instruction and the tuition fees (the EMI tuition is more than twice as expensive as that of VMI). Prospective students must obtain the same threshold requirement for the aggregate score of the three test papers to be admitted to the International Business programme. It is important to note that students self-selected into the EMI and the VMI route for the same degree programme. Because the admission to the programme is based on the aggregate test score and the admission to each instructional route is self-selection, there is no guarantee that EMI and VMI students are homogenous in relations to their pre-course English background. In the Vietnamese public school system, Grade 12 students are required to sit the National High School Graduation Examination (Duong 2019). English, Mathematics and Vietnamese Literature are the three mandatory exam papers in this national assessment (Duong, 2019). Test-takers will then use the results to apply for admission at Vietnamese public universities and colleges (Duong, 2019). Other than the observable background information collected from the demography survey, the motivation for choosing the courses is not explicitly known. Instead of investigating the motivations, the thesis focuses on the outcome of this selection into the course. On this premise, I account for the differences in the English proficiency, GPA attainment and self-efficacy development outcomes of students from both academic streams.

The population of interest comprises of all Vietnamese university students entering the third year of studies in the Business Studies programme that is taught in Vietnamese and English as a medium of instruction. The selection of third-year students for the study is critical to the study’s findings and necessitates a discussion on four main counts. First, third-year students have likely undergone substantial
exposure to academic language and discourse during their university studies. This academic immersion may positively impact their language learning within the EMI and VMI contexts. This study acknowledges that third-year students in this study may have developed some familiarity with the language of academic instruction, which potentially influenced their proficiency in English and Vietnamese. Second, the mature stage of third-year students implies students may have developed some in-depth understanding in their disciplinary filed. The knowledge accumulated from the previous years of studies might affect how the students engage with the content delivered in their respective instructional language, potentially allowing for a more nuanced comprehension of subject matter. The academic maturity of students at the third year, transitioning to the final year of their studies may influence content learning outcomes within both EMI and VMI framework. Next, third-year students, nearing the completion of their programmes, may exhibit higher levels of self-efficacy and confidence compared to newer students. The enhanced sense of familiarity with the learning environment and the academic maturity may influence students’ willingness to participate in their taught courses and engaging with the learning in a more self-assured manner. Finally, as these students are close to finishing their degrees, their language, content learning and self-efficacy development may be influenced by an awareness of their impending transition to the professional world. This could potentially motivate them to approach their taught courses with a practical mindset, connecting theoretical knowledge to real-world applications. This study recognises the potential impacts of their imminent transition on students’ approach to language, content learning and self-efficacy building in EMI and non-EMI tertiary context.

Around 450 students are enrolled in the International Business (IB) programme across every academic year in which there are 160 students for the EMI route and 290 for the VMI route. The data on 111 students (in phase 1) and 106 students (in phase 2) were collected through convenience sampling through an open call for research participation on a voluntary basis. The exception is that it is mandatory for both VMI and EMI students to complete the Marxist-Leninist philosophy and national security courses in Vietnamese at the first term of their studies. Table 3 provides a summary of research participants in this study.
Table 3 Overview of research participants

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Total</th>
<th>Gender</th>
<th>Medium of Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EMI</td>
<td>VMI</td>
</tr>
<tr>
<td>Phase 1</td>
<td>111</td>
<td>66</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50</td>
<td>61</td>
</tr>
<tr>
<td>Phase 2</td>
<td>105</td>
<td>62</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>47</td>
<td>58</td>
</tr>
<tr>
<td>Drop-outs</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

3.4 Research Design: A comparative, longitudinal design

This section outlines the rationales for a comparative, longitudinal design to be adopted in this thesis as well as discussing the methodological and practical considerations when implementing longitudinal research. Figure 2 provides an overview of the study design of this research.

3.4.1 Rationales

Longitudinal research is a methodological design that involves repeated, time-order observation of an individual or group of individuals with the goal of identifying and understanding the sources of between-person differences and of developmental-related changes within individuals across time (McArdle and Nesselroade, 2014; Nesselroade and Baltes, 1979; Rogosa et al., 1982). Longitudinal design is
necessary for this thesis for three main reasons. First, this study aims to understand the progression (or regression) of a student’s individual performance on language, academic and self-efficacy achievement throughout their course span. Methodologically, it necessitates a data collection of the same student cohort at least twice to allow for comparisons across time. Second, as the study also compares performance by students from VMI and EMI instructional streams, it is essential to include a temporal perspective when making inferences about the patterns of change in those two groups. Whilst cross-sectional data may help to detect the level of student achievement at one specific point, having longitudinal data on student’s performance strengthens the credibility of the findings through a track of development over time. Longitudinal design fits with the overall conceptual framework as it allows for the analysis of inter-relations between determinants and outcomes in the observed change. A review of available longitudinal studies on EMI achievement (Čakarun and Drljača Margić, 2021; Dafouz et al., 2014; Dafouz and Camacho-Miñano, 2016) reveals a lack of synthesis across the research findings as existing studies tend to explore the learning outcomes of EMI separately. To fill this knowledge gap, this study seeks to comprehensively account for the trajectory of language, content as well as self-efficacy development in EMI learning (Research Question 1 and 2).

This study also adopts a comparative design to assess the influence of the medium of instruction (EMI and VMI) on students’ language proficiency, content learning, and self-efficacy development. Notably, the comparison between EMI and VMI students allows for direct evaluations over time of language and content learning gains, a key feature of this research. This direct comparison is particularly valuable as it offers insights into these gains within a unique setting, where few opportunities exist for such direct comparisons between EMI and local language instruction (Macaro et al. 2018). Consequently, the research employs a comparative case study approach to evaluate the comparability and dissimilarity between the experiences of students in VMI and EMI courses, addressing the need for direct comparisons in language and content learning.

However, there are two main challenges to implementing the comparative research design in an empirical study. First, one of the main challenges is to select appropriate cases for comparison. The cases should be similar enough to allow for meaningful comparisons, but different enough to provide insights into the research questions (Bloemraad, 2013). To mitigate this challenge, I carefully selected the student cases that are similar in relevant ways, such as all of the student participants
attend the same academic discipline (International Business), delivered by the same content lecturers, at the same higher education institution, during the same stage of academic tenure (third-year), with all speaking Vietnamese as their first language and having previously attended Vietnamese Medium Instruction high schools before entering university. Students are different in their language of instruction during university, which is either VMI or EMI, and this is the focus of the comparison. Another challenge includes ensuring that the data collected is comparable across cases (Bukve, 2019). This requires careful attention to the data collection methods (Bukve, 2019). As a strategy to mitigate this issue, I use standardised data collection instruments such as Duolingo English Test Score, End-of-year GPA results, and scaled self-efficacy data to ensure that the data collected is comparable across all student cases. To strengthen the validity and trustworthiness of the findings, I used mixed-methods approaches including both externally measured test scores and perception-based data to triangulate the findings and provide a more comprehensive understanding of the research questions.

### 3.4.2 Implementation

Several steps were taken to implement the comparative, longitudinal design of this thesis. First, the same two cohorts of students from EMI and VMI Business programme were examined in two rounds for their performance in GPA attainment, Duolingo English Scores, and self-efficacy scaled data. Section 3.5 and 3.6 discusses the research instruments. After the ethics application for this research was approved in March 2021 (HREC application number: 3915), the first phase of data sampling started in May 2021 and ended in July 2021.

In this first round, a demographic survey was administered online via Qualtrics, an approved survey administration platform that is compliant with the Data Protection Regulations. The survey is designed to gather information on student socioeconomic status, prior-university linguistic and academic attainment, university entrance examination score and ongoing private tuition support. Upon completing the demographic survey, students were invited to partake in a scaled questionnaire for the purpose of exploring students’ self-efficacy levels in content learning and English proficiency. The self-efficacy questionnaire had been piloted and cross-validated before being administered to the participants. Having completed the background and self-efficacy questionnaire, eligible students were invited to take part in the first phase of a Duolingo English Test as a proxy measure for English
proficiency. The same cohort of students were invited to submit their GPA record at the end of their academic year in July 2021 as an indicative measure for academic content learning.

In addition to the collection of quantitative data in the first phase, I designed and administered focus group discussions and open-ended questionnaire with those interested and consented participants in the two selected cohorts. At the end of the first phase, a total of 111 students took part in the demographic survey, self-efficacy questionnaire, Duolingo English and GPA submission form in which 50 students were from the EMI programme and 61 from VMI courses. Of this cohort, one focus group discussion was conducted with two EMI and two VMI student participants. As part of the questionnaire, 21 written responses were received for the open-ended questions in which 12 responses came from students in the EMI stream and 9 from the VMI one. All students were invited to the next phase of the research.

The interval period for this study lasts one-year and the second phase of data collection started in May 2022 and ended in July 2022. In the second round of quantitative data sampling, the demographic survey was not again administered. Instead, a similar set of research instruments were administered with the same cohorts of participants from the first round. A total of 105 participants returned to partake in the second round of the self-efficacy questionnaire, Duolingo English Test, GPA score submission form with 6 participants dropping out of the study.

In terms of qualitative data collection, a decision to switch focus group to individual interview was made on the grounds of increasing the response rate with the same purpose of exploring students’ experiences on their respective programme. After an ethics application for the adjustment decision was received in February 2022, 10 semi-structured interviews were conducted of which there were seven EMI and three VMI interviewees. Potential limitations and mitigation

Despite strong reasons for adopting the comparative, longitudinal design as outlined above, three potential limitations remained. This section discusses these three issues in detail and provides mitigation strategies for each of the identified issues.

Firstly, it is not possible to randomly assign student participants into either the VMI or EMI programme because the entry to either of the two academic streams was based on student’s self-selection. This might mean that students on the VMI programme have certain characteristics, such as lesser motivation for English language learning, that are not shared by the EMI group. The lack of randomisation and hence causal inference is an inherent limitation of this research. Even though
students were conveniently sampled for this study on a voluntary basis, a set of sampling criteria were used to ensure the generalisability of the study findings. First, all participants are Vietnamese therefore the first language noise issue can be discarded.

Second, none of the selected participants were exposed to any previous formal EMI learning as they were all enrolled in Vietnamese Medium high schools prior to university studies. At university, students’ complete exams in the same language as their respective instructional medium. As a result, all participants received the same instruction and assessment procedures, albeit in different languages, in their academic programme. The main strength of this approach is that it enables us to compare the GPA scores post-programme between the two cohorts in a fair and consistent manner. All participants followed the same instruction and assessment procedures, which were designed to measure their academic knowledge and skills in their respective language of instruction. This reduces any possible discrepancies or inequalities that might arise from using different languages as an indicator of learning outcomes.

Finally, I controlled for as many background variables (specify, e.g, class, income, etc.) of the students as possible to address the self-selection of students into the programmes as these are known to influence progress (Rodríguez-Hernández, Cascallar & Kyndt, 2020). In detail, I included a set of demographic questions in my questionnaire, such as gender, previous exposure to EMI, province/city of origin, high school attended, parental occupation, parental qualifications, household income, and academic performance data in the online questionnaire (for a full review, see Appendix 2). These questionnaire items help me to identify and control for the potential confounding variables that could affect the study results. The assumption is that once controlling for these backgrounds, the EMI and VMI students are as similar as they can be so the comparison of their outcomes can be attributed to the difference in their media of instruction.

Second, non-random attrition can also decrease the representativeness of the sample and adversely affect the validity of the study. In this study, 6 out of 111 students dropped out of the second phase of data sampling, and missing data takes the form of non-responses in the questionnaire and in the English test. It is, therefore, important to check on randomness of the process leading to missing data. One measure is to statistically investigate the balance between the attrited participants and the continuing participants through the two phases of data
collection. In this way, the researcher can determine if the missing data problem can be ignored because missingness is random and unrelated to other variables. In this study, differences in characteristics between those who dropped out of the study (droppers) in the second phase and those who remained (remainders) can be explored through a logistic regression analysis. Because both remainders and droppers participated in the first phase of data sampling, background data are available to compare the significance of differences between the two groups. On the full anonymised dataset, a new dummy (binary) dependent variable was created with 1 denoting the remainders ($N_{rem} = 105$) and 0 denoting the droppers ($N_{droppers} = 6$). A selection of key demographic variables from the first round such as Gender, Household income, Entry English Grade and Private English Tuition were used as independent variables in the logistic regression analysis. Table 4 shows that none of the coefficients were not statistically significant, showing that there is no systematic difference between the remainders and the droppers. This analysis suggests that there is no evidence of non-random attrition bias and the decision to prematurely drop out of the study by the droppers can be seen as random.

Table 4 Logistical regression analysis of demographic features between remainders and droppers

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>OR $^{1}$</th>
<th>95% CI $^{1}$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1.41</td>
<td>0.24, 8.16</td>
<td>0.7</td>
</tr>
<tr>
<td>Household income</td>
<td>0.63</td>
<td>0.29, 1.27</td>
<td>0.2</td>
</tr>
<tr>
<td>Entry English Grade</td>
<td>0.90</td>
<td>0.35, 1.89</td>
<td>0.8</td>
</tr>
<tr>
<td>Private English Tuition</td>
<td>1.21</td>
<td>0.44, 3.71</td>
<td>0.7</td>
</tr>
</tbody>
</table>

$^{1}$ OR = Odds Ratio, CI = Confidence Interval

A third and final consideration in longitudinal studies is the interval length between waves of data collection. Existing longitudinal studies on EMI outcomes are varied in terms of the interval period from several months (Čakarun & Drilača Margić, 2021) to several years throughout the study length of the examined programmes (Rogier, 2012). Given the high financial, time and manpower constraints of conducting this research as a three-year funded PhD research, this study adopted a middle-range
interval of a one-year period from May 2021 to May 2022. During this one-year interval, all student participants transitioned from the third year to the final year of their Business Studies programme at the university. This can be considered as the most important and mature phase of their academic, linguistic, and self-perception development at the higher education level. As a result, yielding performance data during this period can contain information necessary to examine the impacts of EMI on students’ learning outcomes.

3.5 Quantitative phase

3.5.1 Data collection

Using a demographic survey to assess students’ backgrounds.

Participants were first asked to fill out a demographic survey developed by the researcher to collect information about student socioeconomic, linguistic, and academic backgrounds (for the full survey, see Appendix 2). Data collected from this background survey provided important insights into students’ social stratification factors and served as control variables in the data analysis throughout the four studies.

Using Duolingo English Test to assess English proficiency

An online practice version of the Duolingo English Test was administered to assess students’ General English proficiency. The Duolingo English test contains both the discrete-point tasks which assess language components such as vocabulary items, grammar points and sentence structures and the integrative tasks which measure the incorporation of multiple skills such as dictation, oral interview, and essay writing (Bézy & Settles, 2016; Isbell & Kremmel, 2020; Wagner, 2020; Ye, 2014). In terms of test structure, Duolingo comprises two components: (i) the computer-adaptive part for the short-response items and (ii) the examinee’s extended speaking and writing performances for stakeholders’ in-depth review (Isbell & Kremmel, 2020). The overall scores are presented on a 10-160 scale with sub-scale for literacy, conversation, comprehension, and production that are tapped into users’ general English proficiency (Isbell & Kremmel, 2020). Duolingo is one of the most popular English learning platforms and it offers a free version of a English proficiency test. The paid version of the test, which consists of a series of questions to evaluate English skills in 45 minutes, is widely accepted by thousands of universities (Isaacs, Hu, Trenkic & Varga, 2023). The free test version provides a shorter list of questions
and should be taken within 15 minutes. Because of the cost and time effectiveness, this study adopted the free version for flexibility and a higher probability of retaining interviewee participation. In this study, the participants then reported their Duolingo results, together with a screenshot of their confirmation page for verification purpose. A full discussion on the potential limitations of using the Duolingo Test to measure student proficiency is provided in Section 7.4.1.

**Using GPA to assess Business content learning**

Content learning of Business Studies was measured through students’ end-of-year GPA scores in their respective programme. GPA is the average sum of final course exam grades for all courses taken by all students in the Business Studies programme, from both medium of instruction streams, to meet the classification requirement for each academic year. The end-of-year examinations were centrally administered by the Business Studies Faculty at the chosen university. The end-of-year examination at the researched university was a summative, high-stake assessment that reports students’ academic attainment of each academic year throughout their four-year studies. From the data collected, all students in this study met the minimum requirement for the GPA threshold of 4.0 out of a 10.0-point scale in both waves of data collection. Whilst the use of GPA does not entirely capture the holistic learning trajectory of the student, it does offer a valid indication of students' attainment of subject understanding due to its importance on accreditation and quality assurance (Alyahyan & Düştegör 2020). In line with a growing body of literature that employed GPA as the proxy measure for EMI success (Curle et al., 2020; Rose et al., 2020; Thompson et al., 2019, 2021; Xie & Curle, 2020; Yuksel et al., 2021), this study too collected student GPA on their Business Studies course as a proxy measure for content learning. Once students had received the confirmation of their academic results in May 2022, they were invited to submit their yearly GPA scores in an open-ended questionnaire item and to send a screenshot of their academic transcripts to the researcher's institutional email address for verification purpose. Amid the mentioned benefits of using GPA in this study, it is important to acknowledge GPA has some limitations and challenges as a measure of content learning. First, GPA is based on the final course exam grades, which may not fully reflect the students’ overall learning trajectory or their ability to apply the knowledge and skills in real-world contexts (Klomegah, 2007). It is essential to consider alternative methods that can complement GPA in assessing content learning (Klomegah 2007) To mitigate this limitation, this study integrates students’ self-
assessed level of academic abilities and students' experiences in learning content with their respective instructional programme. Second, it is crucial to compare and contrast the findings of GPA-based studies with those of studies that have used different measures of assessing content learning in Business Studies and related fields, to identify the strengths and weaknesses of each approach (Volwerk & Tindal, 2012). To address this challenge, I provide an in-depth discussion of the findings of this study in light of other related studies using similar and different measures of content learning, in Chapter 5, Section 5.5.1.

Adapting a questionnaire to assess students’ self-efficacy

Having identified a gap in the methodological literature on an EMI-specific self-efficacy questionnaire earlier in Chapter 2, Section 2.5.2, I constructed one EMI-specific self-efficacy questionnaire by adapting instruments from two recent studies, namely, the Questionnaire of English self-efficacy (QESE) by Truong & Wang (2019), and the questionnaire of academic self-efficacy (QASE) by Thompson et al. (2019).

The QESE developed by Truong and Wang (2019) comprises of 32 items that are designed to measure English language self-efficacy in listening, speaking, reading, and writing skill. It is a well-validated scale with a reported internal consistency (Cronbach’s alpha) of 0.96, a reported test-retest reliability of 0.82 and a reported concurrent validity of 0.55. I adapted a total of nine items from the original QESE. Under the category of self-efficacy in General English, items of the adapted questionnaire were evenly distributed across all four skills, exemplified in item 2 ‘I can understand stories written in English’ (reading self-efficacy), item 7 ‘I can give directions from my class to my house in English’ (speaking self-efficacy), item 11 ‘I can write long, meaningful emails in English’ (writing self-efficacy), or item 9 ‘I can understand radio programmes of English speaking countries’ (listening self-efficacy).

The QASE questionnaire by Thompson et al. (2019) is a combined self-beliefs survey which consists of items related to both academic self-efficacy and L2 self-concept. This is also a well-validated scale that was developed from Bandura’s (2006) guidelines and Iwaniec (2014). The initial questionnaire expanded on the original constructs of the QASE with an addition of new items that were more related to self-efficacy in Business English and in Business Content Learning. Examples of these item include item 4 ‘I can discuss in English with my classmates about a
business-related topic that interest all of us’ (self-efficacy in Business English) or item 12 ‘I can explain the key topics related to International Business to a non-expert audience’ (self-efficacy in Business Content Learning).

I combined the items from the QESE and the QASE and organised the selected items into a new self-efficacy in English proficiency and academic content learning that is well tailored for the outcomes and research questions of this thesis. The survey was structured in a five-point Likert scale containing 18 items within three factors, namely self-efficacy in general English, self-efficacy in academic English and self-efficacy in Business content learning. In terms of administration, the questionnaire was translated and presented in Vietnamese, which is the participants’ first language to minimise translation issues. Under the guidelines on conducting research safely during Covid-19 by the OU the questionnaire was administered online through Qualtrics, an approved platform by the OU’s Data Regulations. The questionnaire was disseminated to the participants twice in May 2021 and in May 2022, to serve for a comparative longitudinal analysis later.

**Validity and Reliability of the self-efficacy questionnaire**

One important feature of survey design is to validate the self-efficacy questionnaire and improve its reliability (Pun et al., 2022). I implemented these validation processes in two steps. First, a pilot study was administered to 15 students from the same chosen university who did not participate in the main research. This step was to test and refine my research instruments for the main study. Results from the initial piloting were useful to identify formatting and comprehension issues from respondents’ point of view and to determine the average length of time taken to complete the measure (Rose, McKinley & Baffoe-Djan 2019). From the pilot study, respondents reported confusion when faced with the vast possibilities of a seven-point Likert scale. Therefore, the main scale was narrowed down to a five-point scale from 1 as ‘I cannot do it at all’ to 5 as ‘I can do it really well’ (for a full list of items, see Appendix). The reported averaged time it took to complete the questionnaire was 3 - 5 minutes. No major changes regarding the wording of items were made.

A Cronbach’s alpha coefficient, the most popular measure for the internal consistency and reliability, is calculated. The coefficient captures whether a collection of items is consistently measures with the same characteristics, ranging from a standardised scale of 0 to 1. In the pilot survey, the Cronbach’s alpha was calculated to be at 0.809 (0.8 ≤ α < 0.9), which suggests the questionnaire was internally consistent (Larson-Hall 2015).
In summary, the adapted questionnaire consisting of 18 items under three factors namely self-efficacy in General English, Business English and Business Studies was used to address the research questions of the current study. All conventional measures indicate validity, reliability and internal consistency of the questionnaire design.

### 3.5.2 Data processing

Having collected the quantitative data, I cleaned the data and ran the analysis using a number of statistical methods and the software R. Data from the demographic survey, Duolingo Test score, GPA score and Self-Efficacy in English and Business questionnaire served as the control, explanatory and outcome variables of interest in the study. The collected quantitative data can be operationalised as follows:

**Main explanatory variable**

The key variable of interest is the Medium of Instruction (MOI). Students were first required to answer in the questionnaire in which medium of instruction programme they were currently enrolled. I later coded MOI equal to 1 if the participant had enrolled in the EMI route, and equal to 0 for VMI students. In this study, the potential for selection bias arises due to the self-selection process inherent in the admission decision to the EMI/VMI route. Selection bias is a type of research bias that occurs when the selection of participants or the characteristics of the participants are not representative of the target population (Cuddeback, Wilson, Orme & Combs-Orme, 2004). Selection bias can affect the validity and generalisability of the study results (Cuddeback et al. 2004). Since students self-select into either the EMI or the VMI route, a basic comparison of outcome variables between EMI and VMI students could be vulnerable to selection bias. For instance, students who choose EMI programmes may have a higher level of motivation and language proficiency in English. This self-selection can create a group of students who are inherently different from those choosing VMI programmes. Self-selection might also be influenced by socioeconomic factors. Students from higher socioeconomic backgrounds might be more inclined to choose EMI programmes, and this could introduce bias related to socioeconomic status. This difference in motivation and language skills can affect the outcomes being studied. Furthermore, students who have had prior exposure to English, either through schooling or other means, may be more likely to choose EMI programs. This self-selection based on previous exposure can impact language proficiency outcomes. To address this concern, the study incorporates a set of pre-test variables aimed at capturing potential
socioeconomic differences among students, which might influence their decision to opt for the EMI stream. Additionally, this study collects comprehensive data on various factors influencing the choice of medium of instruction helps in mitigating the potential bias associated with self-selection. Despite these efforts, it is acknowledged that the control variables can only offer a controlled comparison by holding a limited number of socioeconomic background factors constant.

**Outcome variables**

There are three outcome variables to be analysed in the quantitative analysis to answer Research Question 1 and 2.

Chapter 4 examines the relationship between EMI and student linguistic outcome, which is measured by the change in a student’s Duolingo test result over a 12-month interval, denoted as $\text{DuoLingo\_change}_i$.

Chapter 5 examines the relationship between EMI and student academic outcome, which is measured by the change in the student’s GPA score a 12-month interval, coded as $\text{GPA\_change}_i$.

Chapter 6 examines the relationship on EMI and student self-efficacy outcome, which is measured by the change in a composite self-efficacy scaled score in General English, Business English and Business Studies, over 12 months, denoted as $\text{SE\_change}_i$.

**Confounding (control) variables**

Confounding (control) variables are factors that are associated with the intervention or the explanatory variable (in this case, Medium of Instruction) and the outcomes of interest (in this case, English proficiency, GPA score, and self-efficacy score). These factors can influence the outcome in ways that are unrelated to the intervention, potentially obscuring the true effects of the invention. To identify the specific factors that are driving the observed changes in students’ scores, I collected in-depth information about students’ demographic backgrounds, socio-economic factors and their learning experiences through the questionnaire.

First, I captured the socioeconomic background by using the self-reported Household Income (HIncome) variable, which asks ‘what is the total monthly income of your household?’ (question item 13). I follow the Statista country report on the categorisation of the average monthly income in Vietnam in 2021 (Nguyen 2022) to code the variable as an ordinal variable, of which level 1 (low) for families monthly
earning of less than (equivalently) £313, and level 2 (high) for monthly households earning of more than £313.

Second, I collected the Entry English Grade (EntryEnglish) for each student, which asks the score student had achieved for the English subject in the National High School Graduation Examination on a 1-10 scale, as a measure of prior English background. Following the official classification of the Ministry of Education, I code EEQ equal to 0 if the grade is lower than 8.0 (less than good), and equal to 0 if the grade is at least 8.0 (good and excellent). Students in the sample scored from 5.00 to 9.8 and were classified into two levels with the 8.0 cut-off point, as usually used in the official classification.

Third, I collected information on Gender (Gender), a binary variable for the student gender, equal to 0 if male, and 1 if female.

Finally, I used Private English Tuition (EngTuition), which asks how many hours that the student spent attending after-class English lessons during a week. This question serves as a proxy measure of supplementary language support and students’ own effort to learn English. The variable is coded on a binary scale, with level 1 (low) to indicate fewer than 3 hours of private tuition per week, and level 2 (high) for more than three hours per week.

The use of binary control variables in this study has several advantages and limitations. On the one hand, using binary control variables allow for a more concise and objective classification of the pre-test performance of the participants, which can reduce the influence of subjective bias or confounding factors (Miller & Erickson, 1974). Furthermore, it simplifies the differential effect analysis as it eliminates the need to compare continuous or ordinal variables (Miller & Erickson, 1974). Finally, it ensures consistency when discussing and comparing the research results with other studies that use similar or different control variables (Miller & Erickson, 1974; Wolf & Cartwright, 1974). On the other hand, the use of binary variables can pose some challenges to the validity and generalisability of the study findings (Aigner, 1973). For instance, it may not capture the full range or complexity of the pre-test performance of the participants as it only considers two categories (e.g, high or low). Additionally, it may introduce some measurement error or error variance in estimating the effects of interest, as it relies on a binary scale that may not reflect the true distribution or relationship of the variables (Aigner, 1973). Finally, it may limit the applicability and transferability of the study results to other contexts or populations that have different characteristics or preferences (Aigner, 1973). To
mitigate the challenges identified, this study provides a clear rationale for using binary variables as explained above, reporting the findings carefully and transparently in Findings Chapters 4, 5, and 6, and discussing the implications and limitations of the study for future research in Chapter 7.

3.5.3 Data analysis

This section explains the different statistical techniques undertaken to analyse the quantified data collected in this study. To explain the effects of EMI on English proficiency (Chapter 4), GPA attainment (Chapter 5) and self-efficacy development (Chapter 6), I used the longitudinal data from 2021 to 2022 and employed four main statistical methods, including univariate regression analysis, multivariate regression analysis, paired t-test samples, and interaction terms.

**Univariate regression analysis**

A univariate regression between two variables is used to directly compare the respective outcome variable without controlling for their prior characteristics. (Békés & Kézdi, 2021). The univariate regression model would serve as a baseline model to explore the strength of association between the explanatory variable and each outcome variable of interest (Békés & Kézdi, 2021). However, such direct comparison is likely to be biased and inadequate because the results may not entirely reflect the pre-test differences in the participants’ performance, hence a multivariate regression model is used to support the in-depth analysis of the data collection.

**Multivariate regression analysis**

Multivariate regression analyses are the most widely used statistical methods to make a quantitative comparison of the predictability of one or more independent variables (explanatory) on another dependent variable (outcome) (Cohen, West & Aiken 2014; Aiken, West & Reno 1991). In all sections, the Ordinary Least Squares (OLS) regression estimator is used (Békés & Kézdi, 2021). In this study, the primary interest is in understanding how the Medium of Instruction (MOI) and other background factors influence the change in English proficiency, content learning and self-efficacy levels among students. Regression analysis allows researchers to control for the influence of confounding or extraneous variables (Békés & Kézdi, 2021; Aiken et al., 1991). By including variables like Entry English Grade, Gender, Household Income, and Private English Tuition, I account for potential confounding
factors that might affect the relationship between MOI and English proficiency changes. This helps isolate the specific effect of MOI while holding other factors constant.

Multivariate regression analyses provide p-values associated with each coefficient, indicating the statistical significance of each independent variable's effect on the dependent variable (Békés & Kézdi, 2021). This is essential for determining whether the observed relationships are likely to have occurred by chance or if they are statistically significant. The coefficients in the regression equation (e.g., the coefficient for MOI) provide information about the direction and magnitude of the relationship. A positive coefficient indicates a positive association, while a negative coefficient indicates a negative association. In this study, the size of the coefficient quantifies the strength of the relationship between EMI participation and students’ outcomes in language proficiency, content learning and self-efficacy.

Multivariate regression analyses also provide statistics like R-squared and adjusted R-squared, which measure the goodness of fit of the model (Békés & Kézdi, 2021). These statistics indicate how well the independent variables collectively explain the variation in the dependent variable (Békés & Kézdi, 2021). In this study, a higher R-squared value suggests that the model with background factors provides a better explanation for changes in English proficiency, content learning and self-efficacy than a model without these factors. The use of multivariate regression analysis allows researchers to test specific hypotheses about the relationships between variables (Békés & Kézdi, 2021). For example, in this study the hypothesis might be that EMI has a significant positive effect on English proficiency changes. By examining the coefficient for MOI and its associated p-value, the study can either accept or reject this hypothesis based on statistical evidence at the conventional significance level of 5%.

**T-tests for paired samples**
Accompanying the univariate regression analysis, student’s t-tests for paired samples are also used to statistically test for a significant (different from 0) difference in the outcomes between EMI and VMI students over the two years. Paired-sample t-tests are a statistical method used to compare the means of two related groups (Békés & Kézdi, 2021; Larson-Hall, 2015). They are particularly useful for analysing changes in a single group over time, as in the case of comparing English proficiency scores, GPA grades, or self-efficacy scaled data for EMI and VMI students from their third to final year of their studies. Paired-sample t-tests assume that the data
from the two groups are paired in some way, meaning that there is a natural connection between the observation in each group (Larson-Hall, 2015). This assumption is met in this study, where students are paired based on their medium of instruction programme and natural progression from the third to the final year of their studies. The paired-sample t-test assesses whether the mean difference between the EMI and VMI group in this study, is statistically significant. The t-test can determine whether the observed difference is likely due to a real change in the population, or simply the result of random sampling fluctuations (Larson-Hall, 2015).

Paired-sample t-tests have two main strengths that make them a valuable tool for analysing changes in EMI and VMI groups in this study. First, paired-sample t-tests are able to detect even subtle differences between the means of two groups, making them well-suited to identify changes in language proficiency, content learning and self-efficacy scores. To understand the sensitivity to small changes of paired-sample t-tests, it is helpful to consider how the t-statistic is calculated (Larson-Hall, 2015). The t-statistic is a measure of the difference between the means of two groups, divided by the standard error of the mean difference. The standard error of the mean difference is a measure of the variability of the differences between the two groups (Larson-Hall, 2015). When comparing language proficiency, GPA or self-efficacy scores, the variability of the differences between the two groups is often relatively small. This is because each individual’s score is likely to change by a similar amount, either negatively or positively, after one year of studying in their respective instructional programme. As a result, the standard error of the mean difference is also relatively small. Because the standard error of the mean difference is small, even a small difference between the means of the two groups can result in a large t-statistic. This makes paired-sample t-tests are very sensitive to small changes in students’ scores. In this study, this sensitivity to small changes means that paired-sample t-tests can detect statistically significant differences between EMI and VMI groups even when the overall change in students’ scores is relatively small. This is helpful for identifying the effectiveness of medium of instruction on students’ performance, even when the improvements are incremental.

Second, paired-sample t-tests take into account the natural variability between individuals, which allows the analysis to focus on the change for each individual, rather than simply comparing the means of the two groups (Larson-Hall, 2015). In this study, EMI and VMI students are given the same Duolingo English Test twice over a 12-month period. Using a paired-sample t-test, each student’s
score is compared to their own previous score, rather than comparing the average scores of the EMI and VMI groups. This approach helps to isolate the impact of the medium of instruction on each student’s score, reducing the influence of extraneous factors that may vary between students. By accounting for individual differences, the paired-sample t-test provides a more precise and reliable assessment of the effectiveness of medium of instruction on students’ language, content and self-efficacy scores.

Finally, a previous study used paired sample t-tests to measure the increase in English language proficiency in a Turkish EMI tertiary context with a sample size of N = 80 (Yuksel et al., 2021). Using the same statistical test to measure the change in English proficiency scores enables this study to provide comparable evidence between the Vietnamese and other EMI contexts.

However, paired-sample t-tests also have two main limitations that are carefully considered and mitigated when being used in this study. First, paired-sample t-tests assume normality. When the data from both groups are normally distributed, the t-statistic follows a t-distribution, which allows researchers to calculate reliable p-values and determine statistical significance. However, if the data depart from normality, the t-statistic may not follow the t-distribution accurately, leading to unreliable p-values and potentially misleading conclusions about the statistical difference between the means of the two groups. Before choosing paired-sample t-tests for analysing the data in this study, I conducted the Shapiro-Wilk test and a visual inspection of histograms on the data collected. The sample was found to be normally distributed and hence met the normality assumption of t-tests.

Second, paired-sample t-tests cannot identify the specific factors that are causing the observed changes (Békés & Kézdi, 2021). They can only determine whether there is a statistically significant difference between the means of two groups, but they cannot pinpoint the underlying causes of that difference. To mitigate this limitation, I took into account the role of confounding variables that might have influenced the changes in students’ scores. Specifically, I collected students’ background information through the questionnaire to conduct multivariate regression analyses on the relationship between students’ score changes and their background factors. I also conducted in-depth focus groups, semi-structured interviews and written interviews to investigate the specific factors causing the change in students’ performance. The use of additional methods such as
multivariate regression and qualitative approaches enable me to get a more complete picture of the factors influencing students’ performance.

**Interaction term analysis**

Having quantified the effectiveness of EMI in the regression analysis (Research Question 1), Research Question 2 aims to explore how different social backgrounds are related to the effectiveness or the predictability of EMI on the outcome variables. Within the wider methodological literature of social sciences, the use of multiplicative interaction terms in multiple regression analysis, also known as interaction term analysis, is a well-validated technique to assess differential effects of predictors on outcomes (Cohen et al. 2014; Bauer, 2011; Jaccard, Wan & Turrisi, 1990; Jaccard, Turrisi & Jaccard, 2003). An interaction term refers to a statistical method that captures the combined effect of two or more independent variables on a dependent variable (Békés & Kézdi, 2021). It examines how the effect of one independent variable on the dependent variable changes depending on the value of another independent variable. Interaction terms are useful in educational research in that they can help researchers understand the complex relationships between various factors that influence student learning (Allison, 1977). There are three main reasons for using interaction term analysis in this study. First, interaction term analysis allows the researchers to identify complex relationships between the variables that might not be apparent if they were only considered individually. In this study, interaction terms allow for an in-depth examination of equity issues in EMI education as they explore whether the effect of EMI on English proficiency, GPA attainment and self-efficacy level differs across students from different social, economic, linguistic, or cultural backgrounds. Traditional statistical methods, such as multivariate regression analysis, only consider the average effect of EMI on the dependent variables across all students. However, this approach may mask important differences in the effect of EMI depending on students’ background factors. For instance, it is possible that EMI is more beneficial for students from high-income households than students from low-income backgrounds. Interaction term analysis can capture these differential effects by incorporating interaction terms between EMI and social backgrounds in their regression model. These interaction terms assess whether the slope of the relationship between EMI and the outcome variable changes depending on the level of students’ backgrounds. If the interaction terms are statistically significant, it indicates the effect of EMI on the outcome variable is not constant or equitable across all students but rather depends on the combination
of EMI and students' backgrounds. This provides a more nuanced understanding of how EMI influences equitable educational outcomes for students from diverse social backgrounds.

However, incorporating interaction term analysis into this study was not without its challenges. Increasing the complexity of an analysis by adding interaction terms can reduce the statistical power of the study, which refers to the ability to detect a statistically significant effect of a given size. When there are more variables in the analysis, the data spread out more thinly, making it more difficult to detect meaningful relationships (Békés & Kézdi 2021). To address this limitation, I carefully considered the number of interaction terms in the analysis and only included the most relevant variables to the study supported by a solid theoretical basis and prior research. I also ensured that the sample size (N>100) is large enough to support the complexity of the model.

3.6 Qualitative phase

After outlining the quantitative research process, I report on the qualitative phase of the study. This phase involves collecting and analysing data from focus groups, semi-structured interviews, and open-ended questionnaire to understand students' perceptions and experiences with their EMI and VMI programme.

3.6.1 Data collection

Research Question 3 necessitates the use of qualitative analysis as it involves the interpretation of the students' perceptions and experience. A qualitative dataset is used to complement findings from the quantitative results and to provide an exploratory analysis of differences and similarities in students' learning and development experience from different medium of instruction programmes. Three qualitative approaches are used, including focus groups, semi-structured interviews and open-ended questionnaire.

Focus group

At the first stage of the main study, a focus group was perceived to be the appropriate instrument to realise this research goal as it involves engaging students into an informal group discussion and thereby leveraging the group dynamics through interaction among the group members (Galloway, 2019; Wilkinson, 2004). After an invitation for focus group discussion was sent to the 111 participants who had taken part in the earlier survey, four students (two from VMI and two from EMI) confirmed their consent to take part and a focus group discussion was organised
according to the preferred time and date indicated by the four participants. The focus group discussion took place via Microsoft Teams, a free, open-access video-conference platform that is compliant with OU’s Data Protection Regulations. Participants were asked for their consent to record the video, and they had the option to turn off their camera during the call if they wished to do so. During the discussion, all participants were asked to elaborate on their experiences with their respective medium of instruction programme with a focus on English proficiency, content learning and self-efficacy development (for a full list of focus group discussion, see Appendix 4).

Only one focus group took place due to a low response rate. Throughout the focus group discussion, each participant took turns to answer the questions posed by the researcher and a lack of interaction among group members was observed. From my experience of conducting the focus groups in this study, a weakness arises in those participants appeared to be affected by external factors such as peer pressure and group attitudes in sharing in their own perceptions and first-hand experience. It was possible that my participants were not willing to answer the question fully and honestly when they felt intimidated answering questions that were concerned with their academic progress and their personal inadequacy in front of their peers, even when the principle of anonymity and confidentiality was upheld within the group. In the focus group, I noticed some signs of discomfort from some of the participants in the focus group discussion, which were then confirmed with them during informal conversations after the focus group was completed. To avoid such discomfort during the second-phase interviews, I change the interview instrument so that the participants will have 1-1 space to share their experiences with me.

**Open-ended questionnaire**

To complement students’ responses to the survey, an open-ended questionnaire was administered within the same first round of data sampling. In addition to multiple-choice and scaled data in the demographic survey, students were invited to provide open-ended answers on three questions about their perceived relationship between their medium of instruction and their development in English proficiency, content learning and self-efficacy (for a full list, see Appendix 2). As this study investigates students’ experiences within their medium of instruction programme, the open-ended questionnaire provided a tool for respondents to share their reflections on this complex issue in as much detail as they wished 2(Husain, Bais, Hussain & Samad, 012) These open-ended responses were expected to
provide rich, in-depth data that contain information that might otherwise not be found in other, more restrictive forms of data. This represents a low-cost and flexible instrument that respondents can participate remotely at their disposal. At the end of the first phase, a total of 21 open-ended responses were received, in which the number of EMI and VMI participants was 12 and 9 respectively.

**Semi-structured interviews**

Semi-structured interviews were adopted in the second phase of the study (see Figure 2). The semi-structured format of interviews allows the researcher to create a relaxed, informal environment in which to elicit information about the participants’ learning experiences, and perceptions of their medium of instruction programme (Ayres, 2008). Semi-structured interviews also enable me to seek clarifications about various aspects of EMI and VMI learning and explore the topics that may have been unexpected (Ayres, 2008).

The adjustment from focus group to individual interview represents an adjustment in research method that required approval from the ethics committee. An ethics application for methodological adjustment was made in which the same ethical principles continued to be upheld throughout the semi-structured interview process. These include voluntary and informed consent from participants, compensation, transparency, data protection and information security on participants’ data as captured in a HREC form, risk of harm assessment for the researcher and participants and other project-related risks. Once an ethics approval for the adjustment application was received on 19 April 2022, the process of conducting semi-structured interviews began.

An interview protocol was developed by the researcher to ensure the interview stays focused on gathering essential information that was consistent with other forms of qualitative data collected, including focus group and open-ended questionnaire, whilst allowing flexibility for participants to cover unexpected topics in further depth (Nunan, 1992). The protocol consisted of four main sections: (i) questions about the motivations to join their respective medium of instruction programme, (ii) perceived relationship between medium of instruction and English language development, (iii) perceived relationship between medium of instruction and content learning, and (iv) perceived relationship between medium of instruction and self-efficacy development.

The interview protocol was piloted with another PhD researcher whose first language is also Vietnamese to identify any problems with the interview format and to determine the approximate length required for each interview. No
misunderstanding or mistranslation issues was found during the piloting phase and the interview took about 30 minutes to cover all the necessary topics.

Like the first round of focus group, an invitation to participate in a semi-structured interview was sent to the 105 participants that had taken part in the second phase of the survey, ten students (seven from VMI and three from EMI) confirmed their consent to take part and ten interviews were organised according to the preferred time and date indicated by each participant. The interviews took place via Microsoft Teams again. I attempted to warm up the interviews by asking about common topics such as how were they coping with the online learning situation due to the pandemic in Vietnam. By doing so, I was able to build a good rapport with the participants and made them feel at ease. In rare occasions, I rephrased the questions to help the interviewees respond to the right questions.

3.6.2 Data processing

Prior to the data analysis, all audio digital recorded interviews and were transcribed verbatim according to a transcription procedure. The transcripts were next rechecked against the audio files to make sure there no mistakes in the information given by the interviewees to strengthen the reliability of the findings. All the Vietnamese transcripts and open-ended responses were then translated by the researcher into English. I double check the translation with dictionaries, Google Translate, and a Vietnamese PhD researcher fluent in English to ensure the consistency of the translation. The transcripts and written responses were organised in secure storage and easy retrieval compliant with the OU’s Data Protection Regulations. The transcripts were named after certain anonymised attributes about the participants such as their MOI programme (EMI for English Medium Instruction and VMI for Vietnamese Medium Instruction/ qualitative data type (FG for focus group, SI for semi-structured interviews and OQ for open-ended questionnaire), ID code (i.e., the ordinal number of the student interview). Pseudonyms were created and used both in the transcripts and audio files to protect interviewees’ confidentiality. The data were saved in a password-locked folded for the security of the data and were backed up regularly to avoid possible risk of data loss and corruption.
3.6.3 Data analysis

Due to the different sets of qualitative data collected for this study (focus group, open-ended questionnaire, and semi-structured interviews), different methods of data analysis were adopted, including a hybrid approach of deductive and inductive approach (Fereday & Muir-Cochrane, 2006) and layered coding (Clarke & Braun 2017; Terry, Hayfield, Clarke & Braun 2017).

As the study aims to explore students’ experiences and perceptions about their medium of instruction programme, a deductive approach was first employed (Fereday & Muir-Cochrane 2006). In this study, qualitative data was coded into three main themes derived from the theoretical framework namely (i) EMI and language proficiency, (ii) EMI and academic learning, and (iii) EMI and self-efficacy. The next stage, the qualitative data continue to be coded according to the key theoretical concepts on English language proficiency, content learning and self-efficacy, as outlined in Chapter 2, Section 2.4 (Language Inputs and Exposure, Access to Resources, Institutional and Lecturers’ Support), Section 2.5 (Sociocultural context of learning, Prior Knowledge and Schema, Zone of Proximal Development, and Language Scaffolding), and Section 2.6 (Performance Accomplishments, Social Modelling, and Verbal Persuasion). As the data collected were open-ended and semi-structured by nature, an inductive approach was also applied so that codes were developed emergently throughout the data collection and data analysis process (Fereday and Muir-Cochrane, 2006). Inductive codes that were developed during this stage include Trade-off and Considerations.

After a coding approach was defined, all the processed data were uploaded to NVivo – a computer-assisted qualitative analysis software that is compliant with the ethics guidelines from the OU’s Ethics Committee (See Appendix 1 for the Ethics Approval for this study).

At the first stage of coding, all the transcripts and written responses were read through whilst sidenotes and memos were being created concurrently to document the researcher’s initial interpretations of the dataset. The coding process was iterated into the second and the third stage in which the pre-determined codes and the provisional codes were assigned to their respective instances in all the transcripts. In the next stage, a layered approach was applied in which all the codes were combined into larger categories, and subsequent those categories were sorted into different themes (Braun and Clarke, 2006). The interpretive process was developed through the researcher’s understanding of the literature and of the
research problems that were set out in previous chapters. Appendix 3 contains a codebook with all the themes and codes developed during the analysis process.

Coding inter-reliability remained an inherent limitation due to the solo-authored nature of a doctoral thesis, several strategies were employed to ensure the reliability of the analysis in this study. First, the combination of both deductive and inductive approaches enabled the study to maintain focused on the proposed research problems whilst allowing for unexpected themes and perspectives to arise and complement the provisional analysis. Second, the process of coding was iterated through multiple stages to allow for regular reviews and revisions of concepts when new perspectives and new ideas emerged. Lastly, the researcher developed a codebook which was based on the conceptual framework established in the literature review chapter, the research questions, and the worldview of the researcher to maintain consistency throughout the coding process.

3.7 Credibility and trustworthiness

3.7.1 Data triangulation

To enhance the credibility and trustworthiness of this research, a data triangulation approach was adopted. This approach aligns with Bekhet & Zauszniewski (2012)’s concept of 'methodological triangulation', involving the collection of data from multiple sources and employing various methods, such as questionnaires, test scores, focus groups, interviews, and document analysis. This approach was particularly crucial in examining language learning within the educational context. Bekhet & Zauszniewski (2012)’s principle of data used for the same events' was applied, which involved testing language learning through quantitative measures like tests and qualitative methods like interviews and focus groups. The concept of 'reflective triangulation' proposed by Aktinson & Hammersley (1998) was employed to explore the alignment between individuals’ knowledge and practices, aiming to ascertain conformity but also to theorise any deviations. In this study, data were sourced from diverse channels, including written questionnaires, focus groups, and interviews, all targeting the same research questions. The data on test scores from the Duolingo English Test and students' GPAs were collected to cross-reference against their self-reported achievements. The examination of policy documents and relevant literature further reinforced the data triangulation approach, contributing to a comprehensive and robust analysis.
3.7.2 Researcher’s positionality and reflexivity

My engagement with this PhD research is deeply rooted in personal experiences of the evolving educational landscape in Vietnam. Reflecting on my own journey from an economically disadvantaged region with limited access to English education to studying in the UK, I am driven by a passion to explore the impact of language of instruction on educational outcomes. Witnessing the recent surge in English language learning in my home country, driven by policy changes and recognition of English’s significance in modernisation, has sparked my interest in the growing trend of English Medium Instruction (EMI) in Vietnamese higher education.

Having experienced the disparity between urban and rural educational opportunities firsthand, I am ambivalent about the potential consequences of EMI. EMI seems to offer a pathway to international education for Vietnamese students. Yet, I am concerned that it might inadvertently exacerbate existing educational inequalities. This complex discourse around EMI is not unique to Vietnam; it mirrors global trends in the expansion of English’s influence. This dynamic is reflected in both the strong advocacy for EMI at management and policy levels and the skeptical stance held by researchers who question its benefits.

Drawing upon De Costa (2014)’s concept of ‘autobiographical reflection’, I position myself as an insider researcher. Having experienced EMI education first-hand, I am acutely aware of its societal and personal implications, both as a participant and as a researcher. My research framework is deeply rooted in the interplay between social constructivism theory (Vygotsky, 1978), and Bourdieusian sociology of education (Bourdieu, 1986). These theoretical lenses allow me to navigate the intricate relationship between language and instruction within the contemporary internationalizing higher education landscape. I research under the assumption that knowledge is not passively acquired but actively constructed through social interactions and lived experiences of learners with their bounded societal contexts. By intertwining my personal experiences with a critical examination of broader social structures, my study aims to shed light on the multifaceted nature of EMI education, revealing its impacts on individuals and society at large.

Methodologically, I adopt a pragmatic research design to capture both the broader EMI discourse and individual experiences, offering a holistic understanding of EMI’s implications on students’ performance. My reflexivity as an insider
researcher ensures that I remain attentive to personal biases and experiences, enriching the depth and authenticity of this study.

3.8 Ethics

This research strictly followed ethical guidelines for educational research from BERA and BAAL (Association, 2011; Hultgren et al., 2016). As a result, the following issues were carefully considered in the data collection design and implementation.

Consent

This study upholds the importance of obtaining voluntary and informed consent from its participants. All participants were given an information sheet with all details about the research aims, the research process, and what was expected of them. If participants expressed willingness to participate in the research, they would be asked to sign a consent form on their participation in the research and a separate and optional consent form for the focus group as a record attached. As the target participants for this research were Vietnamese students, the research aims were communicated in their first language, which was Vietnamese, so that the effects of translation and interpretation on participants’ understanding of what was involved are minimised. An important consideration was in terms of the reflexive position of the researcher with other participants. In fact, I developed acquaintance relationship with some of the participants as they were my junior fellows during my high school study time in Vietnam. However, as my relationship with these participants were neither personally nor professionally bounded, there was no obvious conflict of interest or coercion. Whilst I may have appeared as ‘senior’ and therefore ‘potentially more powerful’ to these participants, I created a friendly, and safe environment with my participants throughout the research process. I ensured the identities of all participants remain confidential and restricted to the research purpose only. As the target participants were all above the age of 18, they are all legally capable of giving unrestrained informed consent.

Transparency

This research provided participants with honest and open information about the research process without preserving any non-disclosure. The data obtained were used for the stated research goals only.
**Right to withdraw**
In the information sheet, consent form and verbal discussions prior to the actual data collection process, I also highlighted the right of participants to withdraw from the research for any time at any time, and participants do not need to provide any explanation for their withdrawal. I provided my OU email contact to participants so that there was always a clear channel of communication between me and participants throughout the research process.

**Incentives**
I understand that a good use of incentive can encourage participation whilst the level of incentives should not exceed the cost of conducting research and should not appear as an inducement for participation. Therefore, I offered volunteer participants with a free access to a series of my reflection's videos on tips for university applications, learning languages (English, Chinese, Spanish), and career advice. These resources were securely shared by me via links to Google Drive files with an authorised access to participants. I also offered to share the finished research work with all interested participants at the completion of the project. These were non-monetary incentives and served as a good token of appreciation for participants’ time and efforts.

**Harm arising from participation in research**
I recognise that by participating in this research, participants could be put into a vulnerable position to share sensitive and personal information about their academic attainment such as their GPA and English test scores, their socioeconomic status such as their hometown location or their high school type, their negative experiences with either English or Vietnamese as the Medium of Instruction courses, and their negative experiences with peers and instructors in their courses. However, I took steps to uphold the duty of care, and maintain an understanding, and sensitive tone throughout her interaction with participants. This was done in written information sheet and in verbal introduction prior to the data collection process.

**Privacy and data storage**
This study upheld the principles of confidentiality and anonymity of participants’ data. Therefore, I took precautionary measures such as employing ‘fictionalising’ approaches and changing identifying features to avoid identification of participants’ identities. This research also complied with the legal requirements in relation to the storage and use of personal data as stipulated in the UK by the Data Protection Act (1998), the Freedom of Information Act (2000), and the General Data Protection Regulation (2018) (Regulation, 2018). The data was anonymised and
disaggregated so that they were securely stored on a password encrypted digital device accessible to only the researcher, her supervisory team including Dr Prithvi Shrestha, and Prof. Kristina Hultgren, Dr Sarah Mukherjee, and other relevant staff members at Faculty of Wellbeing, Education, and Language Studies. This research obtained an ethics approval from the Open University HREC Committee Number 3915 on 18 March 2021 as enclosed in the Appendix 1.

3.9 Summary

This chapter has outlined the methodological considerations of the thesis. Adopting pragmatic worldview of knowledge, the research adopted a mixed-methods longitudinal design to tackle three research questions spread across three interrelated studies. Multiple sets of data collection instruments and analytical techniques were discussed and employed for their suitability with the research goals. This research followed the OU's guidance on conducting research safely and ethically and obtained an ethics approval from the Human Research Ethics Committee. As a result of the research process outlined, the following chapters present findings and analysis of the data in terms of language proficiency (Chapter 4), content learning (Chapter 5) and self-efficacy outcomes (Chapter 6).
Chapter 4 Language Proficiency Change

4.1 Overview

This chapter investigates the effectiveness of EMI on the language proficiency gains. It compares English language learning gains between EMI and VMI students over time, using comparative and longitudinal data. To explore issues of equity, I analyse the interaction between students' background factors and their language outcomes within the EMI programme, probing into the potential influence of socioeconomic variables on the effect of EMI. Finally, the chapter discusses students' perspectives on the relationship between their respective medium of instruction and their English learning, exploring a qualitative account from students' experiences. In parallel with the overarching research questions in Chapter 2, the chapter aims to address the sub-research questions as follows:

- Sub-RQ 1.1: What is the impact of EMI participation on English proficiency from Year 3 to Year 4, when compared to VMI participation in Vietnam?
- Sub-RQ 2.1: How does the effect of EMI on English proficiency outcomes vary across students with different levels of economic, social, and cultural capital?
- Sub-RQ 3.1: How do students perceive the relationship between medium of instruction and English proficiency outcomes?

The chapter is organised as follows. The first two sections discuss the longitudinal changes and regression results observed from the third to fourth year of their studies, in response to RQ 1.1. Consequently, I conduct an analysis of interaction terms using background variables, EMI participation, and language outcomes, answering RQ 2.1. The fourth section features qualitative findings, offering insights into students' perspectives concerning the relationship between medium of instruction and language acquisition, responding to RQ 3.1. The fifth section discusses the results, followed by the concluding section with the key insights and policy implications.
4.2 Change in student English language proficiency

4.2.1 Descriptive statistics

To measure the change in English proficiency learning for EMI and VMI Business students, Duolingo English test scores were collected at the end of Year 3 and Year 4 of their studies. Table 5 provides a comprehensive overview of the descriptive statistics concerning language proficiency variables among students. The data includes two cohorts: those participating in the English Medium Instruction (EMI) program and those involved in the Vietnamese Medium Instruction (VMI) programme.

In Year 3, EMI students demonstrated a relatively higher English proficiency score, with a mean of 113.7, and a standard deviation of 21.8, which is an indication of relatively low variability in proficiency levels within the EMI group. The median score was 120, while scores ranged from a minimum of 45 to a maximum of 145. By comparison, VMI students displayed a slightly lower mean proficiency score of 96.7, with a comparable standard deviation of 22. The median was 92, and scores spanned from 47 to 137.

A year later, in Year 4, both EMI and VMI cohorts experienced a decline in English proficiency. The mean score for EMI students dropped to 105, with a standard deviation of 17.1. The median score remained consistent at 105, while the range extended from 50 to 140. Comparatively, VMI students exhibited a reduced mean proficiency score of 83.5, with a narrower standard deviation of 12. The median was 85, and scores ranged from 52 to 110.

Table 5 Descriptive statistics of variables on student English proficiency

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMI English proficiency Y3</td>
<td>50</td>
<td>113.7</td>
<td>21.8</td>
<td>120</td>
<td>45</td>
<td>145</td>
</tr>
<tr>
<td>EMI English proficiency Y4</td>
<td>47</td>
<td>105</td>
<td>17.1</td>
<td>105</td>
<td>50</td>
<td>140</td>
</tr>
<tr>
<td>VMI English proficiency Y3</td>
<td>61</td>
<td>96.7</td>
<td>22</td>
<td>92</td>
<td>47</td>
<td>137</td>
</tr>
<tr>
<td>VMI English proficiency Y4</td>
<td>58</td>
<td>83.5</td>
<td>12.0</td>
<td>85</td>
<td>52</td>
<td>110</td>
</tr>
</tbody>
</table>

The decline in average proficiency scores between Year 3 and Year 4 for both EMI and VMI students is noteworthy. In the EMI group, the mean score decreased by approximately 8.7 points, whereas in the VMI group, the decline was more substantial, with a decrease of approximately 13.2 points. Duolingo English
Test scores can be compared to other internationally recognised English proficiency tests. For reference, a Duolingo score of 105 to 115 is generally equivalent to a band 6 on the academic International English Language Testing System (IELTS), which corresponds to a B2 level on the Common European Framework of Reference for Languages (CEFR) (LaFlair & Settles, 2019).

The descriptive statistics presented in Table 6 provide a preliminary overview of the trends in English proficiency scores for both EMI and VMI groups over the course of one year. While these findings offer exploratory insights into the general direction of change, they are insufficient to establish the statistical significance of these changes. To fully understand the implications of these observations, further statistical tests are required, including paired-sample t-tests, univariate and multivariate regression analysis.

4.2.2 Paired-sample t-tests

First, I use in Table 7 paired-sample t-tests to statistically test for the significance of longitudinal change in English proficiency scores of both EMI and VMI cohorts. The t-test analysis allows us to ascertain whether the observed declines in scores are statistically significant and whether they are indicative of meaningful variations in language proficiency. By exploring the paired t-test results, we can discern the extent to which the observed changes in English proficiency scores hold empirical significance and contribute to a deeper understanding of the long-term impact of instructional medium on language proficiency outcomes.

Table 6 presents the results of the paired t-test analysis conducted on the English proficiency scores of the EMI and VMI groups for Year 3 and Year 4. First, as for the EMI group, the paired samples mean difference between Year 4 and Year 3 is -8.4, indicating an average decrease in English proficiency scores over the one-year period (compared to the mean proficiency of EMI students at 113.7 in Year 3, -8.4 is a decrease of nearly 7.5%). The standard deviation (SD) of the mean difference is 10.6, with a standard error (SE Mean) of 1.5. The 95% confidence interval (CI) for the mean difference ranges from -11.6 to -5.4 and the t-value for this comparison is -5.5, which is statistically significant (p < 0.001) based on the degrees of freedom (df) of 46. As such, a significance difference within the EMI group between Year 3 and Year 4 of studies, is observed.
### Table 6 Paired t-test results of EMI and VMI groups for Year 3 and Year 4

<table>
<thead>
<tr>
<th>Paired samples</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>95% CI Lower</th>
<th>95% CI Upper</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMI Y4 and Y3</td>
<td>-8.4</td>
<td>10.6</td>
<td>1.5</td>
<td>-11.6</td>
<td>-5.4</td>
<td>-5.5</td>
<td>46</td>
<td>1.696e-06***</td>
</tr>
<tr>
<td>VMI Y4 and Y3</td>
<td>-12.7</td>
<td>19.8</td>
<td>2.6</td>
<td>-17.9</td>
<td>-7.5</td>
<td>-4.9</td>
<td>57</td>
<td>8.845e-06***</td>
</tr>
</tbody>
</table>

Comparatively, as for the VMI group, the paired samples mean difference between Year 4 and Year 3 is -12.7, indicating a larger than average decrease in English proficiency scores over the same one-year period (compared to the mean proficiency of VMI students in Year 3 at 96.7, -12.7 is about 12.5% reduction). The standard deviation for the mean difference is 19.8, with a standard error of 2.6. The 95% confidence interval for the VMI group’s mean difference ranges from -17.9 to -7.5. The t-value for this comparison is -4.9, which is also statistically significant (p < 0.001) based on the degrees of freedom of 57.

The findings indicate a significant decline in English proficiency scores for both the EMI and VMI groups between Year 3 and Year 4. Without accounting for confounding variables of students’ backgrounds, the VMI students seem to suffer a larger decrease in English proficiency than their EMI counterparts. Visual representations of these changes are presented in Figures 3 and 4 for the EMI and VMI groups, respectively.
It is evident from paired-sample t-tests that both cohorts experienced a decrease in English proficiency. Next, a univariate and a multivariate regression analysis is employed to provide more insights into the extent of decline in each instructional group.
4.2.3 Regression analysis

I employ two regression models. First, a univariate regression between the two variables is used to directly compare the change in English proficiency between VMI and EMI students, regardless of their socioeconomic background. The coefficient of interest in this equation, denoted as $\beta_1$, quantifies the strength of the association between MOI and the change in English proficiency. The error term, represented as $e_{1i}$, captures unobserved factors that can affect Duolingo test performance. The Equation (1) is presented as follows:

$$\text{DuoLingo\_change}_i = \alpha + \beta_1 MOI_i + e_{1i}. \quad (1)$$

However, this direct comparison in Equation (1) may be biased because it solely reflects pre-test differences in students' English abilities. To mitigate this bias, four variables are introduced in Equation (2) to account for pre-test factors: English Entry Grade before university, household income, gender, and private tuition hours. The inclusion of these variables offers a more comprehensive and nuanced comparison. The regression equation is described in Equation (6.2), with $e_{2i}$ being the error term, and $\beta_1$ remains our estimate of interest.

$$\text{DuoLingo\_change}_i = \alpha + \beta_1 MOI_i + \beta_2 Gender_i + \beta_3 Income_i + \beta_4 EngTuition_i + \beta_5 EntryEnglish_i + e_{2i}. \quad (2)$$

In addition to addressing self-selection bias, I consider other assumptions of the linear regression model. First, I assume that the control variables are not highly correlated with the main variable of interest, MOI. My assessment of multicollinearity using Variance Inflation Factor (VIF) coefficients indicates that all predictors have VIF values less than 3, suggesting no violation of multicollinearity. Heteroskedasticity is also not detected in the analysis, and robust standard errors are checked to address any potential violation. I confirm that the residuals reasonably approximate a normal distribution, considering a sample size of 111, which follows the guideline proposed by Tabachnick & Fidel (2013) stating that $N > 50 + 8m$, where $m$ represents the number of exploratory variables, which the data satisfies.

Table 7 shows several observations. First, Column (2) indicates the effectiveness, or in some other statistic language, the predictability, of having English as the medium of instruction is statistically significant. It indicates EMI
students benefit more than VMI students do in terms of their English proficiency. The result in Column (2) accounts for the self-selection into the EMI programmes through the background factors. That is, if we account for the own choice and pre-university advantages of EMI students, we start observing a significant difference in their English proficiency. This significance is not observed in Column (1), which does not account for any pre-university factors.

In other words, EMI participation is associated with a significantly higher rate of change in English proficiency compared to VMI. This finding is particularly important because both groups experienced a significant decline in proficiency, highlighting the relatively positive impact of EMI participation, compared to non-EMI learning. The positive coefficient for EMI in Model (2) ($\beta_1=6.243$) further confirms that EMI students retain more of their English proficiency over the span of one year from 2021 to 2022, which in a sense can be considered as a substantial improvement compared to VMI students.

The regression analysis also provides interesting correlations on the other background factors. The negative coefficient for Entry English Grade in Model (2) ($\beta_2=-3.339$) is statistically significant ($p = 0.026$), indicating that students with higher Entry English Grades before university tend to experience a more significant decrease in English proficiency over the observed period. In contrast, Gender, Household Income, and Private English Tuition do not show statistically significant effects on the change in English proficiency in Column (2), as their coefficients have $p$-values above 0.1. The results suggest that unlike pre-university English proficiency, these socio-economic factors do not play a significant role in influencing proficiency changes over time when accounting for medium of instruction and other background factors. In terms of model fit, Column (2) provides a slightly better fit than Column (1), with a higher R-squared value (0.092 vs 0.017). This indicates that the inclusion of background factors improves the model’s explanatory power, and the coefficients in Column (2) are jointly statistically significant and important in explaining the changes in English proficiency (F-statistic with $p < 0.1$).
Table 7 Regression results of EMI on proficiency change, controlling for background factors

<table>
<thead>
<tr>
<th>Dependent variable: Change in English proficiency</th>
<th>Column (1)</th>
<th>Column (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>unaccounted for any pre-university factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMI = 1</td>
<td>4.208</td>
<td>6.243*</td>
</tr>
<tr>
<td>p = 0.192</td>
<td></td>
<td>p = 0.063</td>
</tr>
<tr>
<td>Entry English Grade</td>
<td></td>
<td>-3.339**</td>
</tr>
<tr>
<td>p = 0.026</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>4.639</td>
</tr>
<tr>
<td>p = 0.153</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household Income</td>
<td></td>
<td>-0.398</td>
</tr>
<tr>
<td>p = 0.798</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private English</td>
<td></td>
<td>0.067</td>
</tr>
<tr>
<td>Tuition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p = 0.973</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-12.655***</td>
<td>11.572</td>
</tr>
<tr>
<td>p = 0.00000</td>
<td></td>
<td>p = 0.405</td>
</tr>
</tbody>
</table>

Observations                                      105                  105

R²                                                  0.017                0.092

Adjusted R²                                         0.007                0.046

Residual Std. Error                                16.292 (df = 103)  15.966 (df = 99)

F Statistic                                        1.732 (df = 1; 103) 2.010* (df = 5; 99)

Note: *p<0.1; **p<0.05; ***p<0.01

In summary, the key findings from Table 7 suggest that EMI participation has a strong and positive effect on and predictability of the changes in English proficiency compared to VMI. This result supports the first hypothesis of the study, which
suggested that EMI participation would not harm students’ English proficiency in Vietnam, compared to the L1 medium of instruction. The analysis also highlights the role of Entry English Grade as a significant factor affecting the English proficiency with those students who have a higher English language grade at entry improving less overall. The results provide insights into the factors contributing to English proficiency changes among students in EMI and VMI contexts (answering the first component of Research Question 1 on effectiveness of EMI). Please refer to Section 4.5.1 in this chapter for a detailed discussion of these findings.

4.3 The equity of EMI Effectiveness and Language proficiency

The preceding section discussed that EMI Business students experienced a drop in English proficiency. In this section, I discuss the equity of EMI effectiveness by investigating how the effect of EMI on the language proficiency varies according to students’ socioeconomic backgrounds (milieus).

4.3.1 Interaction term analysis

To explore the heterogeneity of the EMI effect, I employ an interaction term analysis. The key idea is to evaluate the relationship between the medium of instruction and the background variables and how this relationship affects English proficiency. As discussed in Section 2.6.2, Bourdieu’s theory posits that students’ social, economic, and cultural capital, should influence their academic outcomes both directly and indirectly through their participation in courses with English as the medium of instruction. The second hypothesis of this study posits that students with higher social capital (e.g. attending selective high school), higher cultural capital (e.g. having private English tuition), higher economic capital (e.g. coming from a higher household income) would experience higher English proficiency gains in an EMI programme.

Equation (3) describes the regression model that examines the relationship between changes in the Duolingo English proficiency score (Duolingo Change) and the social background variables, namely, Household Income (Household Income), Private English Tuition (Private English Tuition), Selective High School Attendance (Selective High School Attendance).

\[
\text{Duolingo Change}_i = \alpha + \beta_1 MOI_i + \beta_2 Household Income_i + \beta_3 Private English Tuition_i + \beta_4 Selective High School Attendance_i + \gamma \text{Interaction}_i + e_{3i}
\] (3)
The key contribution to the literature is the introduction of an interaction term \((\text{interaction}_i)\) between, respectively, one of the social background variables and the main variable of interest \(M_{OI_i}\). \(e_{3i}\) is the error term, representing unexplained or random factors in \(\text{Duolingo}_i\_\text{change}_i\) that is not accounted for by the independent variables in the model. Similar to the previous sections, the Ordinary Least Squares (OLS) regression estimator is used. Table 8 reports the interaction term results.

**Table 8 Interaction term of EMI and background factors on proficiency change**

<table>
<thead>
<tr>
<th></th>
<th>Column (1)</th>
<th>Column (2)</th>
<th>Column (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variable:</strong></td>
<td>Language proficiency change</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Medium of Instruction</strong> ((\text{VMI} = 0; \text{EMI} = 1))</td>
<td>25.085***</td>
<td>1.912</td>
<td>-66.949</td>
</tr>
<tr>
<td></td>
<td>(p = 0.004)</td>
<td>(p = 0.830)</td>
<td>(p = 0.205)</td>
</tr>
<tr>
<td><strong>Private English Tuition</strong></td>
<td>5.133**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p = 0.039)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interaction between EMI and Private English Tuition</strong></td>
<td>-10.303***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(p = 0.009)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td></td>
<td>-1.138</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(p = 0.550)</td>
<td></td>
</tr>
<tr>
<td><strong>Interaction between EMI and Household Income</strong></td>
<td>1.084</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(p = 0.751)</td>
<td></td>
</tr>
<tr>
<td><strong>Highschool Selectiveness</strong></td>
<td></td>
<td>-5.592</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(p = 0.197)</td>
<td></td>
</tr>
<tr>
<td><strong>Interaction between EMI and Highschool selectiveness</strong></td>
<td>8.334</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(p = 0.178)</td>
<td></td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>-24.071***</td>
<td>-10.221**</td>
<td>35.176</td>
</tr>
<tr>
<td></td>
<td>(p = 0.0001)</td>
<td>(p = 0.029)</td>
<td>(p = 0.342)</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>105</td>
<td>105</td>
<td>105</td>
</tr>
<tr>
<td><strong>(R^2)</strong></td>
<td>0.084</td>
<td>0.020</td>
<td>0.036</td>
</tr>
<tr>
<td><strong>Adjusted (R^2)</strong></td>
<td>0.057</td>
<td>-0.009</td>
<td>0.008</td>
</tr>
<tr>
<td><strong>F Statistic (df = 3; 101)</strong></td>
<td>3.086**</td>
<td>0.688</td>
<td>1.272</td>
</tr>
</tbody>
</table>

*Note:* *\(p<0.1; **p<0.05; ***p<0.01*
The following sections will delve into the interpretations and analysis of the interaction terms results between EMI and various forms of capital on English language proficiency, including cultural, economic and social capital, offering equity-focused insights into students’ English proficiency learning within the EMI setting.

4.3.2 Interaction between EMI and cultural capital

The interaction term between EMI and Private English Tuition in Column (1) is statistically significant ($p = 0.009$) with a negative coefficient of -10.303. This suggests that students who receive private English tuition and are in the EMI programme experience a larger, statistically significant, loss in language proficiency compared to their non-privately tutored counterparts. This result is contradictory to the expectation as discussed in Section 2.6.2 from the Bourdieu’s theory of capital. Bourdieu’s theory posits students who receive additional English tuition may acquire higher cultural capital and may perform better in English-related assessments, including language proficiency tests like Duolingo. One interpretation from the theory is that private English tuition would act as a buffer against language proficiency loss, especially in an English-intense language environment such as EMI where students are exposed to academic content in a non-native language. The negative coefficient challenges this intuition and suggests that private tuition might not deliver the anticipated benefits in this EMI context of the study.

4.3.3 Interaction between EMI and economic capital

Column (2) discusses the different effectiveness of EMI across different household income levels. The interaction term between EMI and Household Income is negative and not statistically significant ($p = 0.751$). That is, the effect of MOI on language proficiency loss does not differ significantly for students from different income backgrounds. The lack of significance suggests that, within the context of EMI, household income alone may not significantly impact the higher change in proficiency. This result does not provide evidence to support Bourdieu’s theory which predicts that students from higher-income backgrounds may have more resources that can translate into higher linguistic outcomes. It challenges the notion of economic capital being a dominant factor influencing language proficiency in an EMI programme context.
### 4.3.4 Interaction between EMI and social capital

Column (3) explores the differential effects of EMI across the high school attainment of the students. The interaction between Medium of Instruction (MOI) and Highschool Selectiveness is again negative and not statistically significant ($p = 0.178$). It again does not show evidence to support Bourdieu's theory on social capital and its influence on education outcomes. Bourdieu's theory suggests that students who attend selective or prestigious high schools typically have access to a network of resources, including well-qualified teachers, rigorous academic programmes, and influential social networks. These resources are seen as forms of social capital that can positively influence students’ educational achievements, in this case, in form of high language proficiency improvement. The lack of statistically significant results consistent with the predictions from Bourdieu’s theory calls for a further investigation in the Vietnamese context to reconcile the theory and our empirical results. I discuss the inconsistencies and offer explanations in Section 4.5.2.

In summary, the interaction analysis shows that none of the social background factors have a statistically significant and positive impact on the effectiveness of EMI on language proficiency, which deviates from the second hypothesis of the study. Instead, the study found a statistically negative interaction term between EMI and private English tuition. This finding suggests that EMI students receiving private English tuition may encounter more difficulties in improving their English, than those who do not receive such high level of external language tutoring. The lack of significance in the interaction terms between EMI and household income as well as high school selectiveness suggests that these factors may not be strong moderators of language proficiency changes in the EMI context. The next section provides a thematic, in-depth analysis of the perceived relationship between students’ language of instruction and their language learning process.

### 4.4 Students’ Perception of EMI Effectiveness

To further understand the differences in English language proficiency between EMI and VMI students, this section discusses Medium Instruction (EMI) and Vietnamese Medium Instruction (VMI) students’ perceptions. While both groups share a common goal of enhancing their English proficiency, their encounters, challenges, and
strategies exhibit notable disparities, highlighting the contrasting impact of EMI and VMI on language development.

4.4.1 Language Inputs and Exposure

EMI students consistently underscore the enrichment brought about by the immersion in an English language environment. EMI students reported the EMI programme created a rich language environment in which learning activities were conducted through English, which enhanced the language inputs for students to develop their English skills in both productive and receptive domains. Engaging in various linguistic activities, such as class discussions, assignments, and presentations in English, enabled students to actively employ the language. The names of the students in the subsequent analysis are pseudonyms.

Ha articulates this sentiment, affirming:

‘I do think EMI provides a stimulating environment for me to continue using English on a day-to-day basis whether it is for class discussions or for assignment completion.’

Lan shared a similar view, saying:

‘I am becoming familiar with presenting my assignments in front of class and discussing homework with my classmates [in English]. I think EMI provides a great language environment for me to improve my English skill.’

On the same note, Minh mentioned:

‘During the course, I had to use English almost like a routine […] I use English to communicate with my classmates and my lecturers about the study content, do assignments in English and at the end of the course, I have to deliver presentations for my oral exams […] all of which have improved my sensitivity with English language.’

In contrast, VMI students reported to have encountered limitations in their language exposure. The scarcity of English class hours and minimal opportunities for practice lead to frustration and increased language anxiety. VMI students voiced frustration over their restricted exposure to English. They noted the scarcity of English class hours and the resultant dearth of opportunities for language practice. Phuong succinctly articulates this limitation, stating:
'I don’t think studying in VMI has greatly helped me to improve my English skills. We have only 2 hours of English as a Foreign Language class per week, and this was too little to make any difference.'

In the same vein, Van elaborated more details:

'I had a very limited exposure to English learning as there was only one EFL module to take every term. Even so, for VMI students, the English exams were mainly on grammar and not much practical. Therefore, there were not many opportunities to use English practically, academically or professionally during the course unless the student undertook some private tutoring to improve their English.'

This view was also shared by Anh:

'Even though we have EFL subject in the course programme, it's only a 2-hour class a week. I find myself having very little opportunity to practise my English and this leads me to forget most of my English vocabulary that I had previously learn during high school.'

Phuong, Van, and Anh assertions highlight the concern of VMI students regarding the insufficiency of language exposure within the VMI curriculum.

In short, students’ accounts illuminate a stark contrast in language immersion experiences between EMI and VMI students. EMI students consistently highlight the profound development that arises from their exposure to an English language environment. Their engagement in diverse linguistic activities, such as discussions, assignments, and presentations, within the EMI programme, has facilitated their active use and development of English skills. Ha, Lan, and Minh's affirmations emphasise the positive impact of this immersive approach. Conversely, VMI students express frustration and heightened language anxiety due to the scarcity of English class hours and limited practice opportunities. Phuong, Van, and Anh's remarks emphasise the inadequacy of language exposure within the VMI curriculum, resulting in an insufficient foundation for English language proficiency. These divergent experiences underline the significance of a rich language environment in enhancing language skills and highlight the potential drawbacks of limited language exposure in the VMI educational settings.
4.4.2 Access to Resources

The availability of English-written resources and academic materials emerges as another notable advantage of EMI participation. EMI students are appreciative of the exposure to English textbooks and materials that facilitate engagement with international business concepts and academic English. Bao eloquently captures this advantage, stating:

‘Within EMI courses, I have the chance to access English-written curriculum and receive many suggestions for relevant materials related to my course content [...] I had the chance to consult and read many books and journal articles about International Business, which has broadened my Business-related knowledge.’

When asked about the quality of the available learning resources, Linh revealed:

‘The textbooks were mostly in online versions and free to access for EMI students. They [textbooks] were very comprehensive and usually contained much more content than the scope of the taught courses.’

The intensive language exposure and the vast scope of English-written resources have reportedly helped students to expand their vocabulary both in general topics and in Business-specific ones. This sentiment underscores how EMI opens doors to a broader intellectual landscape through the introduction of English materials.

On the contrary, VMI students voiced their dissatisfaction with the scarcity of English-written resources, hindering their academic and professional growth in the language. Tran articulates this constraint, asserting:

‘When I learn new things about my major, which is Business Studies, I also want to know what those terms are called in English and to apply those concepts into my further learning, but I did not have the opportunity to do so within the VMI programme.’

Tran’s statement underscores the impediments posed by limited resources to the development of specialised language proficiency.

In summary, the divergent experiences of EMI and VMI students illustrate the critical role of access to English-written resources in fostering language proficiency. Bao’s and Linh’s perspectives demonstrate how EMI participants benefit from a language-rich environment and ample English materials, as evidenced through expanded vocabulary and heightened engagement with international academic content. By
contrast, VMI students’ frustrations over the lack of English resources in their VMI programme reportedly hinder their ability to acquire specialised language skills.

4.4.3 Language Anxiety

An interesting phenomenon reported by EMI students is the gradual reduction of language anxiety over time. With sustained exposure to English as the medium of instruction, students experienced lowered anxiety levels, heightened learning motivation, and bolstered confidence in utilising English. Nhi reflects this transformative shift, noting:

‘I have developed a good language sensitivity with English through frequent practice and application in my studies. I am no longer nervous or insecure about expressing myself in English as before.’

The presence of a supportive peer environment further amplified this positive transformation, as Nhi points out:

‘I also feel much more motivated when I am immersed in an environment that my peers are very proficient in English. This healthy peer pressure has pushed to develop myself harder to keep up with others in my class,’

This collective positive influence contributed to a conducive atmosphere for language enhancement. EMI students' linguistic growth is also evident through their accounts of enhanced language skills and academic proficiency. Engaging in coursework, discussions, and interactions, these students observed a heightened sensitivity to language nuances and an increased command over English. Nhi elaborates on this, stating:

‘My courses were taught in English, and there are many learning activities to help students engage with the use of English. I can develop all four language skills and learn a lot of useful words through various coursework and seminar discussions.’

This narrative underscores how EMI facilitates comprehensive language development across various modalities.

In contrast, the qualitative data from VMI students highlights an unfortunate consequence of limited exposure - increased language anxiety among VMI students. This heightened anxiety manifested in shyness and nervousness when
attempting to communicate or present in English. Tra’s testimony encapsulates this apprehension:

‘I think learning in VMI has limited my opportunities to develop English skills. I did not get much [English] practice with my lecturers or my classmates. I gradually became very shy and anxious whenever compelled to complete any tasks that require English use.’

Tra’s experience represents the psychological impact of constrained language exposure on VMI students.

In essence, EMI students present a compelling narrative of how consistent exposure to English as a medium of instruction leads to a notable reduction in language anxiety and a simultaneous boost in confidence and motivation. This positive change is interrelated with a supportive and immersive language environment. Conversely, the experiences of VMI students highlight the adverse effects of limited language exposure. The prevalence of heightened language anxiety among VMI learners impedes their ability to engage confidently in English communication.

4.4.4 Institutional and Lecturers’ Language Support

EMI students highlighted the absence of a structured language support program as a notable challenge. This lack of support hindered their ability to seamlessly transition to EMI. Minh draws attention to this gap, emphasising:

‘There is no existing English language support programme available to help us to get on with the 100% English materials […] I would like to see the university provide more support for EMI students, in terms of increasing the availability of English references in the library and some kind of institutional support for students like us who struggle to transition from VMI high-school to an intensive English-speaking environment in EMI.’

Likewise, VMI students expressed their disappointment with the absence of comprehensive language support programmes. The lack of such programmes hindered their efforts to enhance their language skills. Anh emphasises this concern, lamenting:

‘I did not have time and money to take extra English classes and the university does not offer any kind of extra English help programme for VMI students like us.’
Tung shared a similar view with a stronger tone of frustration:

‘There was a systematic lack of language support for VMI students. The core programme did not provide enough contact hours for English learning, teachers did not offer us any opportunities to use English beyond the scope of the two-hour EFL class, and there were no other official resources from the university to help us with this English learning need.’

Students’ perspectives point out to the absence of a structured support system for both VMI and EMI students striving to improve their English proficiency.

On the other hand, in terms of lecturers’ support, students attribute their positive experiences to the proactive role of EMI lecturers in easing the language transition. By promoting effective English communication within the classroom, lecturers contributed to students’ adaptation to the new linguistic context. Quynh underscores the lecturer's efforts, stating:

‘I appreciate that my lecturers made a lot of efforts so that the communication flow within the classroom was mostly done in English, even though there were a lot of new vocabulary that were unfamiliar and hard to explain at first, and on those occasions, Vietnamese was used to help us understand better.’

Similarly, VMI students recognised the inadvertent role of content lecturers in their language learning. While not explicitly tasked with language instruction, some lecturers incorporated English concepts and references, inadvertently contributing to students' language development. Ngoc provides insight into this phenomenon, noting:

‘Sometimes my lecturers combine the English version of some key concepts in the lecture slides and recommended some English references. This was helpful guidance for my further learning of the topic.’

Ngoc's perspective suggests how content delivery can unintentionally enhance language skills.

In summary, the contrast between the experiences of EMI and VMI students in terms of language support systems underscores the critical importance of structured language assistance in facilitating successful language transitions. EMI students' voiced concerns about the lack of a comprehensive language support program during their transition to an English-intensive environment. Their calls for increased availability of English resources and institutional backing reflect a genuine need for
scaffolded language learning pathways. Likewise, VMI students' frustrations over the absence of substantial language support programmes within their curriculum highlight the potential pitfalls of limited language exposure. The absence of such resources hindered their language development and impeded their efforts to enhance their English skills. However, amidst these challenges, the proactive approach of EMI lecturers emerges as a positive factor that facilitates language adaptation. The efforts of these educators in promoting English communication within the classroom, even when dealing with complex or unfamiliar vocabulary, played a pivotal role in students' language acclimatisation. Similarly, the inadvertent role of content lecturers in VMI classrooms, who incorporated English concepts and references, indirectly contributed to students' language enhancement.

4.4.5 Challenges and Mitigation Strategies

Adjustment Period

In the EMI programme, students reported having undergone an initial adjustment period marked by linguistic and academic challenges, attributed to insufficient language preparation and socioeconomic circumstances. Ha elucidates this phase, recounting:

‘The first two years were academically challenging for me and at times the EMI curriculum felt too much to cope with. There were moments I thought I would not be able to complete the programme and might have to switch [to VMI].’

The reasons for the struggling period were reportedly due to insufficient academic and English preparation, for example, Thao mentioned:

‘Language barriers were the biggest challenge for me’,

and Thinh reported:

‘My entry level of English was not as good as it is now. During the first year, I had difficulties comprehending the content being delivered by some foreign lecturers with strong accent and it added to my understanding problems of the subjects’.

Another factor was the lack of prior EMI exposure among students. In detail, Tu revealed,

‘It was difficult for me at first to learn these difficult concepts due to my lack of prior exposure to EMI before’. 
The sentiments expressed by Ha, Thao, Tu, and Thinh echo the broader experience of students grappling with the demands of an intensified linguistic and academic context.

However, the severity of the adjustment period among EMI students varied depending on students’ prior English language foundation and engagement in private tutoring. Ha’s observation resonates with this notion:

‘I grew up in a big city in Vietnam and I had quite an early exposure to English language learning since young. Until now I still take private classes to maintain my English proficiency. It was not difficult for me to get adjusted to EMI learning and I got used to it almost from day one.’

Ha’s experience stresses how prior linguistic exposure and supplementary learning can influence the ease of adaptation to EMI. For others who do not have as strong of a language background, private tutoring still seems to be a common strategy to mitigate the linguistic challenges caused by the EMI delivery. Tri elaborated:

‘I do take private English lessons every week to catch up with the intensive workload from my formal learning but for me the efforts were really worthwhile, and I also achieved very good scores on most of my exams.’

In summary, EMI students with stronger language backgrounds adapt more seamlessly, while those with limited exposure resort to private tutoring and peer support to bridge the gap.

**Leveraging prior English advantage**

In the VMI programme, amidst the challenges that students encountered, some students with prior English backgrounds or extracurricular experiences maintain their proficiency. Some VMI students leveraged their pre-existing English backgrounds and extracurricular experiences to maintain their proficiency. Nhi exemplifies this approach, asserting:

‘I don’t think studying in VMI has affected my English skills significantly. I started as an English major from a selective high school, so my English is already quite good. This helps me to use English confidently in most contexts.’

Nhi’s perspective reveals how prior language exposure can serve as a compensatory mechanism for VMI students.
**Private Tutoring**

Recognising the insufficiency of class hours, several VMI students turned to private tutoring to supplement their language education. Tri exemplifies this approach, asserting:

‘I do take private English lessons every week to catch up with the intensive workload from my formal learning but for me the efforts were really worthwhile, and I also achieved very good scores on most of my exams.’

Students expressed a strong belief that private tutoring helped as a supplementary form of language education to develop English abilities outside the formal VMI classroom. Phuong illustrated:

‘If I had to rely only on these EFL classes [offered by the VMI programme], I would not be able to pass the internationally standardised English tests that were required for my graduation and for my job application. I had to take extra classes to make up for this learning loss.’

**Material Sharing**

VMI students engaged in material sharing with their EMI peers to access English resources and lecture materials. Tra illustrates this strategy, stating:

‘Sometimes, I reach out to my friends who were doing the same Business Studies major but in the EMI strand and asked them for access to English-written materials from their course as we share the same lecturers.’

Tra’s experience highlights the collaborative efforts undertaken by VMI students to augment their linguistic resources, though this practice is only possible within the unique context of the dual instructional programmes in Vietnamese universities.

**Extra-curricular activities**

As some of the VMI participants come from lower income background, reflected in their choice of a lower-fee VMI programme and their indication of household income in the questionnaire, some students mentioned taking paid part-time work such as English tutoring, English tour guide or translation service at foreign firms to maintain and improve their English whilst supporting themselves with living expenses and tuition fees for their studies. In one interview, Anh mentioned:
‘I spent most of my time joining students’ society activities that helped me to use more English whilst having fun making new friends who share the same goals and interests.’

VMI students’ perspectives illustrate how private tutoring, material sharing with EMI peers, the influence of content lecturers, and attending paid-work and extracurricular activities also serve as strategies to compensate for their constrained language learning environment.

In summary, the adjustment period experienced by EMI students during the initial phases of their immersion is a testament to the challenges inherent in adapting to an intensified linguistic and academic environment. The narratives of Ha, Thao, Tu, and Thinh illuminate the hurdles posed by insufficient language preparation, foreign accents, and the absence of prior EMI exposure. However, these challenges are not insurmountable. EMI students with stronger language backgrounds, like Ha, demonstrate a more seamless adaptation, underscoring the importance of prior linguistic exposure.

Private tutoring emerges as a crucial strategy for both EMI and VMI students aiming to bridge the language gap. As highlighted by Tri and Phuong, private tutoring compensates for limited class hours and enhances language proficiency. Material sharing among VMI students, as illustrated by Tra, showcases a collaborative approach to accessing English resources, reflecting the resilience and resourcefulness of these learners.

VMI students with prior English experiences, such as Nhi, skilfully leverage their background to maintain their language proficiency. Engaging in extracurricular activities, part-time work, and student society participation, as demonstrated by Anh, reinforces the multifaceted nature of language acquisition. These findings highlight the varied strategies employed by students to navigate linguistic challenges, emphasising the importance of tailored support systems, supplementary resources, and collaborative efforts. As universities seek to optimise language learning experiences, understanding these adaptive strategies can inform the design of effective language support programmes that accommodate diverse linguistic backgrounds and ensure the success of students in both EMI and VMI contexts.
4.4.6 Trade-offs and Considerations

Some VMI students recognised a potential trade-off between content understanding and language improvement, implying that learning complex concepts in a second language could hinder their academic understanding. Anh shared:

‘I believe I could have had more chance to improve my English if I went with the EMI option but at the same time, I do not want to trade off my understanding of my major in International Business as I think it would be easier for me to study content in my own mother tongue.’

This finding points out to another important yet often overlooked in EMI programme, which is to comprehend disciplinary knowledge. It seems to imply that delivering content knowledge in learners’ second language given their limited language background may potentially hamper their academic understanding of the subject.

4.5 Discussion

The following section discusses the possible explanations for the changes in English language proficiency, students’ perceptions and the interaction between EMI students’ backgrounds and their attainment within their EMI programme.

4.5.1 English language proficiency gains and Student's Perceptions

The lack of statistically significant proficiency gains observed among EMI students over the two years 2021-2022 aligns with findings obtained in comparable contexts (see more at Aguilar & Muñoz, 2014, evidencing no significant gains in listening and grammar skills among CLIL students; G. Hu & Lei, 2014, showing no statistically significant effect on students’ national standardised English test scores; Vidal & Jarvis, 2020, highlighting no significant difference was made on students’ lexical diversity and complexity). Prior research has illuminated several factors contributing to the proficiency loss experienced by EMI students.

First, cognitive load emerges as a critical factor. Vidal and Jarvis (2020) emphasise that the cognitive strain resulting from content comprehension diverts cognitive resources from language learning. EMI students’ pursuit of academic content in their second language can compromise their ability to dedicate sufficient mental capacity to English language acquisition. Consequently, a compromised learning environment manifests, straining cognitive resources and impeding language development.
Second, the importance of linguistic input quality, as advocated Time-on-Task Theory by Rossell and Baker (1996) (previously discussed in Section 2.3.2), plays a significant role in language acquisition. Vidal and Jarvis (2020) highlight suboptimal input quality as detrimental to vocabulary acquisition and potential language fossilisation. The absence of linguistic richness and fluency in EMI lectures impedes students' comprehension of complex structures and specialised vocabulary, hindering language proficiency development.

Third, learner proficiency, contrary to expectations, can lead to varied outcomes. Aguila and Munoz (2014) demonstrate that less proficient students make greater gains than more proficient students in shorter timeframes, suggesting EMI's advantage for lower proficiency students. This emphasises the importance of well-structured EMI pedagogies and the potential influence of input quality on differential gains.

Fourth, linguistic accommodation strategies employed by EMI students, identified by Hu and Lei (2014), introduce another layer of complexity. While such strategies aid basic communication, they may undermine disciplinary and language learning objectives. The use of the native language as an accommodation strategy may hinder full immersion in English, emphasising the trade-off between content comprehension and language development.

Collectively, evidence from the current literature suggests that the interplay of a wide range of factors—cognitive load, input quality, accommodation strategies, and learner proficiency—forms a complex web influencing the observed proficiency loss among EMI students.

When contextualised within the Vietnamese EMI setting, I found several pertinent factors emerge. In terms of the language input quality, in the qualitative phase, it was noticeable that a few participants (Quynh and Ngoc), explicitly described how their EMI lecturers explained technical terms in Vietnamese even under the full EMI context, a concept known as ‘code-switching’ (Auer, 2013). There are two possible reasons for the mixed use of instructional languages: either the content lecturers lack the English capability to clearly explain the academic concepts in English, or the lecturers lack the pedagogical skills to deliver the EMI lessons. Both reasons raise pertinent questions about the language skills required for effective lecturing in English in Vietnam, an area of research that had been previously highlighted in Vu & Burns (2014)’s study. Proficiency in everyday communication does not necessarily translate to pedagogically adept English
delivery. As such, it is important for universities to recognise the primary role of the EMI proficiency of the lecturers as a determinant of impactful language instruction.

However, the lack of EMI-delivery skills may not entirely fall within the preparation of the course lecturers. Vietnamese institutions offer limited faculty training for teaching staff, and if they do, such training sessions typically consisting of brief seminars primarily focused on teaching methodologies and teachers' subject expertise. Galloway & Sahan (2021) shed light on the challenges faced by EMI practitioners in Vietnamese universities. There is insufficient emphasis on enhancing lecturers' language proficiency, which could enhance students' language proficiency gains. One potential policy lesson is EMI lecturers must attend more tailored training programmes that hone EMI-specific language teaching skills within the Vietnamese context. Extending support for staff should also include increased collaboration between English language teachers and content lecturers, fostering the exchange of expertise to improve the effectiveness of English language proficiency development for students during EMI immersion. Recent developments have seen a convergence between EMI and English for Academic Purposes (EAP) scholarship (Wingate & Hakim 2022; Galloway & Rose 2021). Galloway and Rose (2021) propose the establishment of connections between the language and content requirements of EMI programmes, with an emphasis on providing more language and language pedagogy training. This underscores an opportunity for EMI scholarship to draw upon research and practices from the well-established field of EAP. Further collaboration between EMI and EAP, both in terms of student support and teacher education, could be the way to go forward (Wingate & Hakim 2022).

The frequent practice of code-switching between Vietnamese and English presents noteworthy challenges. While code-switching can facilitate content comprehension, an excessive reliance on the native language may impede complete immersion in an English-language environment. As indicated in the findings of Galloway and Sahan (2021), English-Medium Instruction (EMI) lessons were delivered in various ways. While languages other than English including L1 Vietnamese were employed in many EMI classes, the prevailing sentiment among most students and teachers was that only English should be permitted in the classroom. It is noteworthy that one English for Academic Purposes (EAP) instructor expressed the viewpoint that, although some use of Vietnamese may be beneficial in EMI classes, she still advocated for maximising the use of English. Interviews with Vietnamese students further revealed their reluctance to resort to their native language (L1) within the EMI classroom, with a prevailing belief that teachers should
minimize the use of L1 in the EMI learning environment. Striking a delicate balance becomes imperative to facilitate optimal language acquisition while simultaneously upholding the effectiveness of content delivery. These findings, when assimilated within the discourse of Vietnamese EMI, enrich our comprehension of the multifaceted dynamics contributing to the intricacies of language proficiency loss among EMI students. This study's insights can be also applied into similar EMI contexts, resonating with implications for EMI programme design, lecturer pedagogical training, curriculum refinement, and strategic language support initiatives.

While there is evidence of an absolute decline in proficiency across two cohorts, I also find evidence of relative proficiency retention among EMI participants when compared to their VMI peers. This finding is in line with a number of existing studies (Yuksel et al., 2021; Čakarun & Drinjača Margić, 2021; Taguchi, 2014; Rogier, 2012). There are three potential explanations for the result.

First, it is possible that EMI students, if given sufficient time with the course, could improve their English proficiency. Yuksel et al. (2021) and Rogier (2012) suggest EMI courses require time to materialise, with notable progress emerging after two to four years of EMI education. The temporal lag of improved English proficiency emphasises the need for a longer longitudinal perspective when assessing language development. It is pertinent to address the optimal duration of English language immersion in EMI research design: that is, what is the optimal time that EMI students need to outpace their non-EMI peers in terms of language improvement. The Time-on-Task theory from Krashen (1976) further emphasises the importance of contact hours and language exposure in improving proficiency.

Second, the consistent and meaningful language engagement within content domains remains a crucial driver of retaining language proficiency amongst EMI students (Čakarun & Drinjača Margić, 2021). Chapter 6.2 shows a decline in proficiency scores among students, and Chapter 6.4 underscores a noteworthy reduction in language anxiety and concurrent enhancement of students' confidence and motivation compared to the experiences of VMI students. EMI students are immersed in an English-rich academic environment, engaging with specialised terminology across various courses. This starkly contrasts with the limited language exposure experienced by non-EMI students, who receive instruction primarily in their native language.
Third, the role of prior language knowledge and motivation is pivotal, as highlighted by Čakarun and Drlića Margić (2021). EMI students, propelled by aspirations for international education and careers, exhibit heightened motivation and dedication to language learning. This intrinsic drive fosters proactive engagement and commitment to language acquisition, resulting in more substantial progress, or at least more retention of language skills. The interplay between motivation and language development underscores the importance of learner disposition within the EMI context. Motivational dimensions, while yet to be explored in this study, have been substantiated in prior research (Galloway & Sahan 2021; Lueg & Lueg 2015), affirming EMI students’ elevated levels of motivation including seeking future job, study abroad and practising English opportunities.

In conclusion, the interweaving of the research findings with existing studies reveals multifaceted dimensions contributing to English proficiency gains among EMI students. Temporal trajectories, content-driven exposure, learner motivation, socio-pragmatic considerations, and contextual relevance collectively enrich our comprehension of EMI language development. These insights carry implications for curriculum design, pedagogical strategies, and policy considerations, fostering informed approaches to enhance language proficiency outcomes within EMI contexts in Vietnam and beyond.

4.5.2 The Equity of Effectiveness of EMI

Sub-Research Question 2.1 focuses on how EMI contributes to the social equity in the Vietnamese higher education context. I explore this equity component by looking at how students from diverse backgrounds would benefit differently from attending EMI courses, compared to VMI students with similar background. Findings from Section 4.3 show virtually no statistically significant and positive impact of social backgrounds on EMI effectiveness, calling for an investigation on the link between social equity and EMI impacts in the Vietnamese context.

Students who receive private English tuition and are in the EMI programme experience a more significant loss in language proficiency compared to their non-privately tutored counterparts. The first potential reason for this perhaps counterintuitive result is that private English tuition provided at external language centres or by external English tutors may not align with the requirements of the EMI programme at the university (Nghia, 2015). The private tutoring sessions may be tailored for preparing students in terms of general English instead of academic
English with specific language demands of the content at the EMI programme. The aim of these English private sessions offered by external English education centres is on linguistic understandings, inter-cultural competence, and relations instead of necessary academic skills to comprehend subject specific concepts (Nghia & Tran, 2020). Even though additional language support is expected to ease students’ transition into an academic environment and lead to more positive language proficiency outcomes, unmatched language preparation, and perhaps lack of pedagogical skills from private tutors, can result into the worsening of academic English skills. The second potential reason is the self-selection into attending private English sessions. Instead of viewing the sessions as a signal of higher cultural capital, having to attend the sessions may indicate the need to improve the English skills. It is then no longer surprising to observe students who need to attend extra English classes to perform worse in their English tests, particularly if the additional support is not sufficiently long to have a materialised impact on their English proficiency. As discussed in 4.4 and consistent with the quantitative results in 4.3, VMI students who had private English sessions improved their English skills and appreciated the extra sessions as Tri and Phuong admitted: “I do take private English lessons every week to catch up with the intensive workload from my formal learning!” EMI students who had to take extra English classes do so “to maintain English proficiency” and for some the first two years prove challenging in terms of the academic contents already. Such difficulties may have resulted into the observed worsening English proficiency measured by the DuoLingo test in Section 4.3. The measure of economic capital, household incomes, also has no significant effect on the EMI effectiveness in the study, indicating that students from more affluent households do not benefit more from attending EMI courses in terms of developing their English proficiency than their lower-income households’ counterparts. It is perhaps surprising as it is often expected that the former group of students could benefit from more resources to improve their academic English skills. The previous discussion on private English sessions provides a counterargument to this expectation. Consistent with the previous results, having more resources may not result in better English proficiency. In traditional education contexts, having higher household income may confer several advantages to students. These may include access to private tutors, high-quality educational resources, extracurricular activities, or enrichment programme. These opportunities typically give students a significant edge in language acquisition and proficiency. However, in the EMI context of this study, the dynamics are different. These programmes are set fee-
paying, which already excludes lower-income students, and students who are enrolled in EMI are mostly qualified as high-income groups compared to VMI students. As such, even within the EMI groups, any classification of higher and lower incomes may not result in any observable differences in changing proficiency. In this case, there is a homogeneity in the socioeconomic backgrounds of the students within the EMI and VMI cohorts. This homogeneity means that the economic disparities among students within the program are relatively small compared to the broader population. The advantages associated with higher household income may be less pronounced because all students come from similar economic backgrounds.

Finally, the non-significant interaction term between MOI and Highschool Selectiveness can be explained by various factors. In terms of students’ initial proficiency levels, students who attend selective high schools may have had a higher level of English proficiency when they entered university (Anderson, Gong, Hong & Zhang, 2016). As a result, they may have less room for improvement compared to their peers who had lower initial proficiency levels. This is consistent with previous research which concludes that less proficiency students make more proficiency gains in shorter timeframes within the EMI studies (Aguila & Munoz, 2014). Second, selective high schools in Vietnam often focus on challenging academic content (Nguyen, 2019), which does not necessarily prioritise language development so that improved English proficiency is less observable. Even though the results are different from what we expect from Bourdieu’s theory, the Vietnamese context provides an appealing justification for the empirical findings.

### 4.6 Summary

In summary, the quantitative analysis indicates that EMI participation has a strong and positive effect on and predictability of the changes in English proficiency compared to VMI, even when both groups experience a decline in proficiency. Students who have private English sessions benefit less from the EMI course compared to those who do not attend extra classes. None of the social and economic capital variables have any significant impact on the effectiveness of EMI, highlighting the already established equity of EMI effectiveness in the Vietnamese university on students’ English proficiency.

The qualitative analysis identifies the transformative impact of EMI on language development, stemming from extensive language exposure, access to resources, and reduced anxiety. In contrast, the VMI context presents a significant barrier to
comprehensive language enhancement, characterised by limited exposure, heightened anxiety, and inadequate resources. The disparate experiences of EMI and VMI students emphasise the role of instructional medium in shaping the depth and breadth of language learning opportunities. In both cases, the significance of lecturer support and prior language background is evident. While EMI students benefit from supportive lecturers who facilitate language transition, VMI students rely on content lecturers to inadvertently contribute to their language development.

Ultimately, the analysis reveals that EMI students enjoy a more conducive environment for holistic language growth, marked by exposure, resources, and support, while VMI students navigate a challenging landscape characterised by limitations and the need for individualised strategies. The findings necessitate the pedagogical implications of instructional medium and call for targeted interventions to enhance language learning within the EMI context.
Chapter 5 Content Learning Change

5.1 Overview

This chapter investigates the effectiveness of EMI on the academic learning outcomes. It examines the changes in student’s academic learning from the third to fourth year for EMI and Vietnamese Medium Instruction (VMI) Business students, using longitudinal data over two academic years. To address the equity of the effectiveness, I analyse the interaction between students’ background factors and their academic learning outcomes within the EMI programme, probing into the potential influence of socioeconomic variables on the effect of EMI. Finally, the chapter discusses students’ perspectives on the relationship between their respective medium of instruction and their academic learning, exploring a qualitative account from students’ experiences. In parallel with the overarching research questions in Chapter 2, Section 2.8, the chapter aims to address the following sub-questions:

- RQ 1.2: What is the impact of EMI participation on academic learning outcomes from Year 3 to Year 4, when compared to VMI participation in Vietnam?

- RQ 2.2: How does the effect of EMI on academic learning outcomes vary across students with different levels of economic, social, and cultural capital?

- RQ 3.2: How do students perceive the relationship between medium of instruction and academic learning outcomes?

The chapter is organised as follows. The next two sections discuss the longitudinal changes and regression results observed from the third to fourth year of their studies, in response to RQ 1.2. Consequently, I conduct an analysis of interaction terms using background variables, EMI participation, and academic learning outcomes, answering RQ 2.2. The fourth section features qualitative findings, offering insights into students' perspectives concerning the relationship between medium of instruction and language acquisition, addressing RQ 3.2. The fifth section discusses the results, followed by the concluding section with the key insights and policy implications.
5.2 The effectiveness of EMI on academic learning

5.2.1 Descriptive statistics

To measure the change in academic content learning for EMI and VMI Business students, end-of-year GPA scores of EMI and VMI Business students were collected in Year 3 and Year 4 of their studies. GPA is the average sum of final course exam grades for all courses taken by students to meet the classification requirement for the Business study programme at the university. The GPA scores serve as a proxy measure of students’ content learning in this study. Table 9 provides a comprehensive overview of the descriptive statistics concerning content learning attainment variables among students. The data includes two cohorts: those participating in the English Medium Instruction (EMI) program and those involved in the Vietnamese Medium Instruction (VMI) programme.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMI content learning Y3</td>
<td>47</td>
<td>7.97</td>
<td>0.55</td>
<td>8.0</td>
<td>7.0</td>
<td>9.2</td>
</tr>
<tr>
<td>EMI content learning Y4</td>
<td>47</td>
<td>7.28</td>
<td>0.39</td>
<td>7.4</td>
<td>6.5</td>
<td>7.9</td>
</tr>
<tr>
<td>VMI content learning Y3</td>
<td>58</td>
<td>7.93</td>
<td>0.47</td>
<td>8.0</td>
<td>7.0</td>
<td>8.8</td>
</tr>
<tr>
<td>VMI content learning Y4</td>
<td>58</td>
<td>8.13</td>
<td>0.47</td>
<td>8.0</td>
<td>7.0</td>
<td>9.5</td>
</tr>
</tbody>
</table>

In Year 3, EMI students demonstrated a relatively higher GPA score compared to their VMI counterparts, with a mean of 7.98, and a standard deviation of 0.55. The small standard deviation indicates a relatively low variability in academic attainment levels within the EMI group. The median score was 8.0, while scores ranged from a minimum of 7.0 to a maximum of 9.2. By comparison, VMI students exhibited a slightly lower mean GPA score of 7.93, with a standard deviation of 0.47, both are lower than those of EMI students. The median was 8.0, and scores spanned from 7.0 to 8.8.

A year later, in Year 4, the EMI cohort experienced a fall in content learning, similar to what was reported in Chapter 6 for English proficiency. The mean GPA score for EMI students dropped to 7.3, with a standard deviation of 0.4. The median score decreased to 7.4, while the range narrowed from 6.5 to 7.9. Comparatively, VMI students experienced an increased mean GPA score of 8.1, with a slightly wider
standard deviation of 0.4. The median was 8.0, and the scores ranged from 7.0 to 9.5. EMI students experienced a decline in the average academic scores from 7.98 to 7.28, a drop of 0.7 points while VMI students improved their academic attainment, with an increase in the GPA score from 7.93 to 8.13.

### 5.2.2 Paired-sample t-tests

To establish whether the differences in the overall trends in academic learning come from the sampling variation or represent a statistically meaningful pattern, I use paired-sample t-tests in Table 10 to calculate the statistical significance of the longitudinal change in GPA scores of both EMI and VMI cohorts. The t-tests confirm whether the observed decrease in GPA scores of EMI students and the observed increase of VMI students are statistically significant and if they are genuine variations in GPA performance over two years.

<table>
<thead>
<tr>
<th>Paired samples</th>
<th>Mean</th>
<th>SD</th>
<th>SE Mean</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMI Y4 and Y3</td>
<td>0.693</td>
<td>0.66</td>
<td>0.097</td>
<td>0.888</td>
<td>0.498</td>
<td>-7.14</td>
<td>46</td>
<td>5.3e-09***</td>
</tr>
<tr>
<td>VMI Y4 and Y3</td>
<td>0.202</td>
<td>0.45</td>
<td>0.059</td>
<td>0.082</td>
<td>0.321</td>
<td>3.386</td>
<td>57</td>
<td>0.001***</td>
</tr>
</tbody>
</table>

Table 10 presents the results of the paired t-test analysis. The paired samples mean difference for the EMI group between Year 4 and Year 3 is -0.693, indicating an average decrease in GPAs over the one-year period (compared to the mean GPA score of EMI students at 7.97 in Year 3, -0.693 is a decrease of nearly 8.7%). The standard deviation (SD) of the mean difference is 0.67, with a standard error (SE Mean) of 0.097. The 95% confidence interval (CI) for the mean difference ranges from -0.888 to -0.498 and the t-value for this comparison is -7.14, which is statistically significant ($p < 0.001$) based on the degrees of freedom (df) of 46. As such, a significance difference is observed.

By comparison, for the VMI group, the paired samples mean difference between Year 4 and Year 3 is 0.202, indicating a larger than average improvement in GPA scores over the same one-year period (compared to the mean GPA score of VMI students in Year 3 at 7.93, 0.202 is about 3% improvement). The standard deviation for the mean difference is 0.46, with a standard error of 0.06. The 95% confidence interval for the VMI group's mean difference ranges from 0.082 to 0.321.
The t-value for this comparison is 3.4, which is also statistically significant (p < 0.001) based on the degrees of freedom of 57.

The findings indicate a statistically significant decline in content learning scores for the EMI group and a significant improvement for the VMI one between Year 3 and Year 4. Without accounting for any self-selection into the programmes, the EMI students seem to struggle academically while the VMI counterparts made significant gains in their academic performance from Year 3 to Year 4. Visual representations of these changes are presented in Figures 5 and 6 for the EMI and VMI groups, respectively.

![Figure 5](image1.png)  
**Figure 5** Significant decrease in content learning for EMI cohort

![Figure 6](image2.png)  
**Figure 6** Significant increase in content learning for VMI cohort

While the t-tests suggest that the EMI students experienced a learning loss while the VMI students enjoyed an academic improvement during the observed period, the results alone may not provide a fair description of the effectiveness of EMI on academic learning. Students in both courses may be inherently different in terms of background and motivation so that any changes in the learning outcomes may come from the different backgrounds, beyond any effect of the medium of instruction.
5.2.3 Regression analysis

To add nuance to the analysis, a multivariate regression is used to robustly quantify the impact of MOI accounting for other background factors on the changes in GPA performance. The regression analysis also allows for the hypothesis testing of statistically significant relationships, quantification of effect sizes, and control for potential confounding variables, contributing to a more comprehensive and nuanced understanding of the factors influencing content learning changes for both cohorts.

I employ two regression models. First, a simple univariate regression between the two variables is used to directly compare the change in GPA score between VMI and EMI students, regardless of their socioeconomic background, as presented in Equation (4) below.

\[
\text{GPA}_{\text{change}_i} = \alpha + \beta_1 \text{MOI}_i + e_{1i}. \tag{4}
\]

The coefficient of interest in this equation, denoted as \( \beta_1 \), quantifies the strength of the association between MOI and the change in GPA. The error term, represented as \( e_{1i} \), captures unobserved factors that can affect academic learning performance. However, this direct comparison in Equation (4) may be biased because it solely reflects pre-test differences in students' academic abilities. To mitigate this issue, four variables are introduced in Equation (5) to account for pre-test factors: English Entry Grade before university, household income, gender, and private tuition hours. While these variables may not capture all unobserved factors influencing self-selection, they offer a more comprehensive and nuanced comparison. The regression equation is described in Equation (5), with \( e_{2i} \) being the error term, and \( \beta_1 \) remains our estimate of interest.

\[
\text{GPA}_{\text{change}_i} = \alpha + \beta_1 \text{MOI}_i + \beta_2 \text{Gender}_i + \beta_3 \text{HIncome}_i + \beta_4 \text{EngTuition}_i \\
+ \beta_5 \text{EntryEnglish}_i + e_{2i}. \tag{5}
\]

I consider the assumptions of the linear regression model. First, I assume that the control variables are not highly correlated with the main variable of interest, MOI. My assessment of multicollinearity using Variance Inflation Factor (VIF) coefficients indicates that all predictors have VIF values less than 3, suggesting no violation of multicollinearity. Heteroskedasticity is also not detected in the analysis, and robust standard errors are checked to address any potential violation. I confirm
that the residuals reasonably approximate a normal distribution, considering a sample size of 111, which follows the guideline proposed by Tabachnick & Fidell (2013) stating that $N > 50 + 8m$, where $m$ represents the number of exploratory variables, which the data satisfies. Table 11 reports the regression results.

Once controlling for the student backgrounds, Column (2) indicates the effectiveness, or in some other statistical language, the predictability, of having English as the medium of instruction is statistically significant. It indicates EMI students struggle more than VMI students do in terms of their GPA performance, like the results from the $t$-tests. In Column (1), which does not account for any pre-university factors, EMI students showed a statistically significant negative change in their GPA performance. Even when we include their own choice and pre-university advantages of EMI students in Column (2), I still observe a significance reduction in their academic performance, compared to their non-EMI counterparts.
### Table 11 Regression of EMI on GPA scores, controlling for background factors

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Change effects of GPA between year 4 and year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td><strong>Medium of Instruction (VMI/EMI)</strong></td>
<td>-0.895***</td>
</tr>
<tr>
<td></td>
<td><em>p = 0.000</em></td>
</tr>
<tr>
<td><strong>Entry English grade</strong></td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td><em>p = 0.944</em></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>-0.103</td>
</tr>
<tr>
<td></td>
<td><em>p = 0.395</em></td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td>-0.047</td>
</tr>
<tr>
<td></td>
<td><em>p = 0.395</em></td>
</tr>
<tr>
<td><strong>Weekly English tuition</strong></td>
<td>-0.010</td>
</tr>
<tr>
<td></td>
<td><em>p = 0.884</em></td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>0.202***</td>
</tr>
<tr>
<td></td>
<td><em>p = 0.007</em></td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>105</td>
</tr>
<tr>
<td><strong>R²</strong></td>
<td>0.393</td>
</tr>
<tr>
<td><strong>Adjusted R²</strong></td>
<td>0.387</td>
</tr>
<tr>
<td><strong>Residual Std. Error</strong></td>
<td>0.558 (df = 103)</td>
</tr>
<tr>
<td><strong>F Statistic</strong></td>
<td>66.711*** (df = 1; 103)</td>
</tr>
</tbody>
</table>

Note: *'p<0.1; **p<0.05; ***p<0.01

In other words, EMI participation is associated with a statistically significant decline in content learning level compared to VMI. This result is particularly important because it highlights the negative impacts of EMI participation on students’ content learning over time. The negative coefficient for EMI in Model (2) ($\beta_1=-0.883$) further confirms that EMI students suffered a learning loss over the two years 2021-2022, compared to their VMI peers. Sections 5.4 delve into the qualitative reasoning behind this underperformance.

The regression analysis also provides interesting correlations on the other background factors. All the background factors including Entry English Grade, Gender, Household Income, and Private English Tuition do not show statistically significant effects on the change in content learning in Model (2), as their coefficients have p-values above 0.1. The result suggests that only EMI participation included
in both model (1) and model (2) have statistically significant effects on the change in GPA performance, indicating that pre-university has little effect on the learning process from Year 3 to Year 4 of the students. In terms of model fit, model (2) provides a slightly better fit than Model 1, with a higher R-squared value (0.2 vs 0.017). This indicates that the inclusion of background factors improves the model's explanatory power, and the coefficients in Model 2 are jointly statistically significant and important in explaining the changes in English proficiency (F-statistic with $p < 0.1$).

In summary, the key findings from Table 12 suggest that EMI participation has a strong and negative effect on and predictability of the changes in content learning compared to VMI. The results provide insights into the factors contributing to content learning changes among students in EMI and VMI contexts (effectiveness of EMI). Conclusively, the study did not find significant evidence in favour of the second hypothesis H2 as EMI students experienced a decline in their academic attainment. The next section examines how the differences in economic, social, and cultural capital are associated with the identified decline in content learning among EMI students over time.

5.3 The equity of EMI effectiveness and content learning

The preceding section discusses that EMI Business students experienced a decline in content learning from 2021 to 2022. In this section, I discuss the equity of EMI effectiveness by investigating how the effect of EMI on the GPA performance varies according to students’ socioeconomic backgrounds.

5.3.1 Interaction term analysis

To explore the heterogeneity of the EMI effect, I employ an interaction term analysis. The key idea is to evaluate the relationship between the medium of instruction and the background variables and how this relationship affects content learning. As discussed in Chapter 2, Section 2.6.2, Bourdieu’s theory posits that students’ social, economic, and cultural capital, should influence their academic outcomes both directly and indirectly through their participation in courses with English as the medium of instruction. I expect students with higher social capital (e.g., attending selective high school), higher cultural capital (e.g., having private English tuition), higher economic capital (e.g., coming from a higher household income) would experience less content learning loss in an EMI programme. Equation (6) describes the regression model that examines the relationship between changes in the GPA
score \( (\text{GPA}_\text{Change}_i) \) and the social background variables, namely, Household Income \( (\text{HouseholdIncome}_i) \), Private English Tuition \( (\text{PrivateEnglishTuition}_i) \), Selective High School Attendance \( (\text{Highschool}_i) \).

\[
\text{GPA}_\text{change}_i = \alpha + \beta_1 \text{MOI}_i + \beta_1 \text{HouseholdIncome}_i + \beta_2 \text{PrivateEnglishTuition}_i + \beta_3 \text{Highschool}_i + \gamma \text{interaction}_i
\]  

(6)

where \( \text{interaction}_i \) denotes the interaction term between \( \text{MOI}_i \) and one of the following: (i) \( \text{HouseholdIncome}_i \), (ii) \( \text{PrivateEnglishTuition}_i \), (iii) \( \text{Highschool}_i \), and \( \gamma \) now captures the differences in the relationship of the medium of instruction MOI and GPA within the social the groups defined by the binary variable used in the interaction term analysis. Table 12 presents the results.
The following sections will delve into the interpretations and analysis of the interaction terms results between EMI and various forms of capital on content learning, including cultural, economic and social capital, offering equity-focused insights into students’ mastery of content learning within the EMI setting.
5.3.2 Interaction between EMI and social capital

The interaction term between EMI and Selective Highschool Attendance in Column (1) is statistically significant \( (p = 0.002) \), with a negative coefficient of -0.690. This suggests that students who attended a selective high school and are in the EMI programme, experience a larger, statistically significant, drop in GPA performance compared to their non-selectively schooled peers. This result is contradictory to the expectation as discussed in Chapter 2, Section 2.6.2, from Bourdieu’s theory of capital. Bourdieu’s theory suggests that students who are admitted to selective, elite secondary schools may acquire higher social capital and may perform better in academic tests, including the GPA scores. One interpretation from the theory is that having a selective high school education provides students with a solid academic foundation and an exclusive network of highly intelligent and academically inclined peers which allows these students to thrive at higher education level. The negative coefficient found in Column (1) counters this interpretation and indicates that selective high school background did not necessarily give students an advantage on academic progression when compared to their peers. This finding is consistent with current research from other contexts (Anderson et al., 2016; Clark, 2010).

5.3.3 Interaction between EMI and economic capital

Column (2) explores the differential effectiveness of EMI across different household income levels. The interaction term between EMI and Household Income is positive and not statistically significant \( (p = 0.777) \). This result means that the effect of EMI on the changes in GPA does not vary significantly across students from different income backgrounds. The lack of significance suggests that, within the context of EMI, household income alone may not significantly impact the effectiveness of EMI on the change in academic learning. This result, again, does not support Bourdieu’s theory which predicts that students from higher-income backgrounds may have more resources for academic support or access to better educational opportunities. It challenges the notion of economic capital being a dominant factor influencing GPA performance. By implications, other forms of capital such as social and cultural capital may be more important in determining higher performance for students. Students who have more cultural capital such as familiarity with the instructional language, may perform better regardless of their economic backgrounds. This is true for lower-income VMI students who made gains in their GPA performance during the observed period. By contrast, high-income EMI students who lack the
access to learning content through their mother tongue, struggle to keep up and maintain their GPA.

### 5.3.4 Interaction between EMI and cultural capital

Column (3) discusses the varying effectiveness of EMI across students who receive different levels of weekly private tuition. The interaction between EMI and Private English Tuition (PET) is marginally significant ($p = 0.057$), with a negative coefficient of -0.259. This result again provides a counterargument against Bourdieu’s theory on English tuition as a form of cultural capital that directly influences higher educational outcomes. Bourdieu’s theory posits that students who access higher level of English immersion and private tuition may have gained more advantage for academic learning than those without such access. The result in Column (3) does not support Bourdieu’s theory and instead, challenges the notion that cultural capital offers benefits to EMI students who receives private English tuition.

In summary, social capital and cultural capital have a statistically significant negative influence on the effectiveness of EMI on students’ content learning. The study did not find significant evidence in favour of the second hypothesis H2 as the expected relationship between social, economic, and cultural capital and academic outcomes in the EMI programme is not supported. The lack of statistically significant positive findings to support the predictions from Bourdieu’s theory calls for a more in-depth exploration in the Vietnamese context to reconcile the theory and our empirical evidence. I offer explanations and discussions of the inconsistencies in Section 5.5. The next section presents a thematic analysis of students’ perceived relationship between medium of instruction and content learning.

### 5.4 Students’ Perception of EMI Effectiveness

Having examined the relationship between EMI and content learning in quantitative terms, I now report on the findings from the interpretative inquiry into students’ perceptions of the role of language of instruction. Data from a focus group discussion, open-ended questionnaire and semi-structured interviews were used to exploit the complexity and depth of students’ experiences in both medium instructional programmes. Based on the learning theories framework that was previously set out in Chapter 2, Section 2.4.2, I coded the data collected into a
thematic analysis. Each of these themes are discussed below along with interview excerpts to illustrate each theme.

5.4.1 Sociocultural context of learning

The sociocultural context of learning plays a pivotal role in shaping students' perceptions and experiences in both Vietnamese Medium of Instruction (VMI) and English Medium of Instruction (EMI) settings. These perceptions provide a window into how language, culture, and context intersect to influence content learning processes and outcomes (Ackermann, 2001). Students' narratives underscore the complex interplay between these factors, revealing both advantages and challenges that stem from the sociocultural context. The names of the students in the subsequent analysis are pseudonyms.

From a VMI students' perspective, Nhat, asserts:

‘Studying in Vietnamese sometimes limits my learning scope in my major. There remains a lack of materials and resources in Vietnamese for my topics and most of them tend to be outdated and do not keep up with the constant changes in knowledge production process. There’re some translated concepts that are very difficult to understand even with Vietnamese because of the contexts and the specific use of the terms in foreign context.’

Nhat's assertion that studying in Vietnamese sometimes limits the learning scope in their major unveils a multifaceted predicament. This perspective unveils the potential limitations of accessing resources in Vietnamese. The scarcity of up-to-date materials and resources in their native language exposes a gap in knowledge dissemination and production. The specific challenges of translating concepts from foreign contexts become apparent, further hampered by teachers' limited understanding of these nuances. Nhat's experience reflects how a well-intentioned focus on the local language can inadvertently isolate learners from the global academic discourse. The absence of comprehensive and contextualised resources impedes the depth of understanding and engagement with subject matter, raising concerns about the adequacy of VMI in addressing contemporary knowledge dynamics.

From an EMI student’s perspective, Thao reveals a hindrance faced in her EMI programme that includes difficulties in applying the taught content into real-life contexts.
Thao confided:

‘I think that my lectures and the materials were directly borrowed from foreign textbooks and other foreign universities’ curriculum without much contextualisation to the Vietnamese local circumstances. This has confused my understanding of the subject and sometimes the examples given in the lectures felt very alien and difficult for me to relate. As a result, I did not fully grasp the gist of the materials and ended having quite a shaky foundation of the academic knowledge aspect in my programme.’

Thao’s candid reflection on her EMI experience highlights a distinct facet of the sociocultural context. The borrowing of teaching materials from foreign sources without sufficient adaptation to the local context underscores a potential disjunction between the internationalisation agenda and students' comprehension needs. Thao’s sentiment reveals that despite the global aspirations of EMI programmes, a lack of contextualization can hinder content understanding. The alienation and confusion she expresses point to the importance of aligning educational content with the students’ sociocultural milieu. Yen’s wish for more contextualised knowledge items echoes this sentiment, emphasising the need for relevance and relatability in EMI content. This dissatisfaction signals a gap between the intended internationalisation goals and the nuanced socio-contextual learning needs of students.

Both perspectives underscore the pivotal role of sociocultural context in content learning experiences. While VMI students grapple with limitations stemming from the scarcity of resources and potential outdated information, EMI students encounter challenges rooted in the misalignment between imported content and local context. This analysis indicates a delicate balance that must be struck to ensure effective content learning. The sociocultural context necessitates a nuanced approach—one that acknowledges the benefits of cultural and linguistic familiarity while also embracing the globalised dimensions of education.

The EMI context in Vietnam's rapidly changing educational landscape embodies the tension between global aspirations and local realities (Nguyen, 2018b; Tran & Marginson, 2018). The government's push for internationalisation through EMI programmes reflects a desire to align with global trends, yet the individual student experience reveals the need for careful consideration of context. The friction between the broader agenda and the students' personal learning journeys
underscores the challenges in effectively harnessing the sociocultural context for meaningful content learning (Nguyen & Tran 2018; Tran & Marginson, 2018).

In essence, the sociocultural context is a double-edged sword, presenting both opportunities and obstacles in content learning experiences. The intricate interplay between language, culture, and context requires educational institutions to adopt a balanced and adaptable approach—one that leverages the advantages of cultural familiarity while addressing the pitfalls of contextual dissonance. The voices of VMI and EMI students serve as valuable reminders that education's true success lies in a harmonious integration of global perspectives and local realities.

5.4.2 Prior knowledge and schema

The concept of Prior knowledge and schema, which is deeply rooted in the social constructivist theory, underscore the pivotal role of learners’ existing knowledge structures in the acquisition of new information (Ackermann, 2001). Under a social constructivist framework, individuals actively construct meaning by connecting new concepts to their pre-existing mental frameworks or schemas (Hmelo-Silver et al., 2007). These schemas serve as cognitive structures that facilitate the organisation, assimilation, and accommodation of new knowledge. Social interactions, guided by more knowledgeable individuals or peers, play a crucial role in shaping and refining these schemas, fostering cognitive development (Palincsar, 1998).

When scrutinising the viewpoints of both VMI and EMI students, the nuances in how the instructional medium influences the utilisation of prior knowledge and schema theory within their learning journeys come to the forefront. Within the VMI context, students' narratives reverberate with the core principles of schema theory. Here, the use of a familiar language, Vietnamese, emerges as a powerful scaffold that seamlessly integrates novel concepts into their existing cognitive frameworks. Students consistently report that learning in their mother tongue not only promotes profound understanding but also facilitates rapid comprehension and heightened memory retention. This alignment with schema theory is rooted in the notion that pre-existing cognitive structures serve as anchors, grounding new information in familiar territory.

For instance, Thuy's assertion that learning in Vietnamese enables easy understanding and prolonged retention underscores the primacy of prior knowledge in facilitating meaningful learning experiences:
‘Of course, at first, I struggled to understand some technical concepts such as ‘supply-demand’ or ‘balance sheet’, or ‘exchange rate’. But I think learning in Vietnamese helps my learning better because I am already familiar with those terms when I hear them from TV or newspaper, therefore when I read more about them in the textbooks, my prior experiences and knowledge definitely helped my understanding.’

Thuy’s viewpoint illustrates how exposure to certain technical terms in everyday contexts, such as television and newspapers, establishes a foundation that bolsters comprehension when encountered within academic materials. By linking the exposure to technical terms in everyday contexts to academic materials, Thuy’s perspective demonstrates how existing knowledge forms a sturdy foundation, facilitating the assimilation of novel concepts.

By comparison, the EMI context introduces complexities that challenge the application of schema theory. English inadequacy emerges as a formidable impediment, hindering the seamless integration of new knowledge. Minh’s struggles in EMI courses, stemming from unfamiliarity with technical terms in English, resonate with schema theory’s concept of incomplete or underdeveloped schemas hindering effective learning. Minh described:

‘There’re many technical terms that I did not even get to know in Vietnamese in the first place, so when I was first introduced to those concepts in English, I was very confused.’

In the same vein, Son shared a similar challenge as he recounted the difficult in grasping new ideas due to limited foundational knowledge:

‘When I study EMI courses, I had to switch my thinking and analysis from my L1 Vietnamese to L2 English. This process was difficult for me at first as I was not accustomed to functioning in another language other than my mother tongue. Throughout this knowledge learning process, I found some of the newer ideas very hard to absorb and understand because I did not have the necessary foundational knowledge about the topics being taught.’

Furthermore, Tien echoed the same learning experience:

‘The biggest challenge to my content learning comes from my lack of prior exposure to Business English related concepts. The more time I spent with the course, the better I understand how these concepts are used in the course and I can gain deeper understanding of business knowledge from constant practice, revision, and reading materials after class hours.’
A glimmer of contrast emerges in the experiences of high-performing EMI students, exemplified by Bao. He summarised his content learning process as follows:

‘As I obtain quite a high English level at the start of the course, I could thoroughly enjoy my learning experience with the courses taught in my programme.’

Bao’s positive academic journey, attributed to a solid English foundation, underscores the reciprocal relationship between linguistic preparedness and schema utilisation. Bao’s testimony emphasises the importance of linguistic proficiency in navigating the demanding curriculum of EMI programmes, hinting at schema theory’s principle that well-structured schemas are vital for meaningful learning experiences.

In summary, the interplay between prior knowledge and schema theory is a dynamic force that shapes the learning experiences of both VMI and EMI students. In the VMI context, the resonance with schema theory is evident in the seamless integration of new concepts into familiar cognitive frameworks. Conversely, the EMI context grapples with linguistic barriers that challenge schema utilisation. High-performing EMI students further accentuate the role of linguistic preparedness in effective schema application. This comparative analysis underscores the intricate interplay between instructional language, prior knowledge, and schema theory, highlighting the crucial role of pre-existing mental frameworks in the acquisition of new knowledge.

5.4.3 Zone of Proximal Development and learning support

The concept of Zone of Proximal Development (ZPD) that was developed by Vygotsky (1978) emerges as another pertinent framework to explain the intricate dynamics of learning support within both VMI and EMI contexts. The ZPD, rooted in sociocultural theories of learning, posits that learners thrive within a realm where they can actively engage in tasks just beyond their current capabilities, with the assistance of more knowledgeable others. The interviews conducted with students illuminate how the availability of clarifications and discussions as semiotic tools in Vietnamese, along with the facilitation of familiar language interactions, facilitates an enriched ZPD, fostering cognitive growth and comprehension. For instance, Than, a VMI learner, expresses the convenience and effectiveness of utilizing Vietnamese language in their interactions with peers and lecturers:
‘I think studying in Vietnamese makes it so easy and convenient for me to interact with my peers and my lecturers. We all share the same first language of Vietnamese which helps us to communicate effectively and get the message across almost instantly. I also like to follow-up with my lecturers with questions and discussions which are much easier done in Vietnamese without any language barriers.’

Than’s perspective highlights the key role of maintaining seamless communication and information exchange between learners and their support system. This stands in line with Vygotsky’s emphasis on social interactions as catalysts for cognitive development.

Similarly, Bien articulates the sense of connection and reassurance derived from the ability to communicate with lecturers in one’s native language:

‘I felt it was easier to connect to and seek support from my lecturers. All of my lecturers are Vietnamese and being able to communicate with my lecturers in my first language helped me to be more proactive and reassured when I asked questions and exchanged thoughts with them. I do not have to worry about using certain grammar or sentence structure when communicating the basics with my lecturers.’

Bien’s account emphasises the role of reduced language barriers to empower students to actively participate within their ZPD, creating meaningful interactions with their lecturers and getting the support that they need to understand the subject matter.

However, narratives from EMI students reveal a contrasting picture. As an EMI student, Hanh shared a hint of her academic struggles and suggested more comprehensive support is required for EMI students to navigate the challenges posed by an intensive English-speaking environment:

‘I would like to see the university to provide more support for EMI students, in terms of increasing the availability of English written reference materials in library and provide some language support programmes for EMI students who struggle to transition to an intensive English-speaking environment like the one in EMI programme.’
Moreover, a discussion about the availability of resources that empower students in pursuing their learning goals revealed a spectrum of formal and informal support strategies. One prevailing approach involves seeking private English tuition, as aptly articulated by Tu:

‘Whilst I work hard outside of my official class to improve my English by taking six hours of private English tuition per week.’

Tu’s statement exemplifies the proactive measures students undertake outside of formal coursework, reflecting both the commitment to enhance language proficiency and the recognition of its paramount importance within the EMI context. In this case, the private tuition may serve as a semiotic tool that helps the student to operate in their ZPD that was not otherwise offered by the university’s EMI context.

In essence, the ZPD concept shines a spotlight on the intricate interplay between language scaffolding, sociocultural theories, and cognitive development. The narratives of VMI students vividly underscore how the integration of familiar language within the learning environment fosters an enriched ZPD, facilitating effective interactions and support. Conversely, the accounts from the EMI context highlight the challenges and imperatives related to language proficiency and support mechanisms. This analysis not only accentuates the role of language in shaping the ZPD but also underscores the need for tailored strategies and resources to empower learners within diverse linguistic and instructional frameworks.

5.4.4 Language scaffolding for comprehension and learning

The pedagogical concept of language scaffolding, wherein language is employed as a supportive mechanism for enhancing content comprehension and learning, emerges as a salient theme within the narratives of both Vietnamese Medium of Instruction (VMI) and English Medium of Instruction (EMI) students. Rooted in sociocultural theories of learning, this approach underscores the intricate interplay between language, social interactions, and cognitive development. Drawing from interview data with VMI students, a vivid illustration emerges of how their mother tongue, Vietnamese, operates as an effective scaffold, facilitating their navigation of intricate subject matters. For instance, Hoang’s testimony highlights this phenomenon:
‘I think learning in my own mother tongue worked to my advantage as I can easily understand the lectures. If I get stuck in any difficult concepts, I can also ask teachers and classmates for clarifications in Vietnamese, and they would use examples or references that I can easily relate to in Vietnamese. Learning in Vietnamese also helps me to remember the study content for a very long time. Therefore, when it comes to revision time, my knowledge of the course is still fresh, and I do not have to spend a lot of time familiarising myself with the concepts and knowledge written in Vietnamese.’

This account exemplifies the efficacy of language scaffolding in fostering content comprehension. The ability to solicit clarifications and contextual examples in one's native language from educators and peers enriches the learning environment, cultivating a supportive milieu for knowledge acquisition. Hoang's remark about sustained knowledge retention further underscores the enduring impact of scaffolded learning, echoing sociocultural theories that underscore the role of meaningful interactions in knowledge consolidation.

In a similar vein, Dinh further underscores the role of first-language scaffolding in bolstering learners’ confidence and facilitating the momentum of their learning trajectory:

‘The courses are delivered by Vietnamese teachers, who also have experience in lecturing and teaching in Vietnamese for many years so I feel very comfortable and confident about my content learning. If I have any difficulties, I can also ask questions in Vietnamese with much effort; this helps to save my time learning and also builds my subject-matter understanding.’

Dinh's insight accentuates the essential role of linguistic familiarity in engendering a sense of ease and confidence, thereby contributing to an enhanced learning experience. This sentiment underscores the interconnectedness between language scaffolding and cognitive engagement, aligning harmoniously with sociocultural learning theories.

Contrastingly, the EMI context introduces a layer of intricacy to the concept of language scaffolding. Linh's recounting of her struggles with a Marketing lecturer possessing limited English proficiency lays bare a potential impediment. The deficiency in the scaffold of language proficiency engenders obstacles in effective knowledge transmission and comprehension. Linh's expression of frustration illuminates the challenges that arise when the scaffold of language is weakened:
‘In my second year, I studied International Marketing with another lecturer whose English skills were so problematic and limited. It was very difficult for her to express her ideas clearly and also for me to understand her lectures, even though she also had studied abroad in Australia, I think. She used Vietnamese mostly in her lectures, and I did not like it very much.’

In sharp contrast, Yen's perspective introduces a nuanced dimension, revealing a beneficial application of language scaffolding even within the EMI context. Yen elaborates:

‘Sometimes, I resorted to speaking Vietnamese with my lecturer and my classmates so that I can understand some key concepts better. The lecturers were also flexible with using L1 Vietnamese, which makes the learning a lot easier.’

Yen's recourse to her native language as a means of grasping intricate concepts underscores the continued efficacy of language scaffolding, even in a foreign medium of instruction. The varied attitudes towards the utilization of translanguaging underscore its potential merits and limitations, signifying the contextual dependence of language scaffolding's efficacy in the EMI setting.

The comparative analysis of the experiences of VMI and EMI students underscores the multi-faceted nature of language scaffolding. VMI students seamlessly integrate their mother tongue as a robust scaffold for content comprehension, leveraging linguistic familiarity for cognitive enrichment. Conversely, EMI students traverse a more complex terrain where the efficacy of language scaffolding is susceptible to the proficiency levels and pedagogical approaches of lecturers.

In summary, these perspectives underscore the central role of language as a mediator in content learning. The VMI context exemplifies the empowerment conferred by linguistic scaffolding, showcasing the harmonious alignment with sociocultural theories. In stark contrast, the EMI context underscores the delicate balance between the language of instruction and the scaffolding potential inherent in one's mother tongue. The mixed attitudes towards translanguaging underscore the imperative for astute implementation to optimize the scaffolded learning experience for EMI students.
5.5 Discussion

The following section discusses the possible explanations for the changes in English content learning, students’ perceptions and the interaction between EMI students’ backgrounds and their attainment within their EMI programme.

5.5.1 Effectiveness of EMI on content learning and students’ perceptions

The observed negative relationship between EMI and academic learning in this study is consistent with findings in certain countries (Dafouz et al., 2014; Nurshatayeva & Page, 2020). Previous research has identified two main reasons for the learning loss associated with EMI. First, students who lacked prior exposure to EMI before university may experience difficulties during the initial stage of transitioning to a new instructional environment (Nurshatayeva & Page, 2020). The transition of first-year students into the university is a well-researched area in the higher education field (Briggs et al., 2012; Jackson et al., 2000). Students reported a wide range of challenges from self-management and adapting to new learning environments to other pastoral care matters (Nghia & Tran, 2020). Second, disciplinary differences may contribute to the challenges of EMI. Soft subjects like Law or History may demand higher levels of English language complexity and proficiency compared to hard subjects like Maths or Science, potentially hindering students’ performance in the former group (Dafouz et al., 2014).

Interestingly, the Vietnamese EMI context examined in this study deviates from the above explanations. Studies focusing on the same subject of Business Studies during the transitional period from Year 3 to Year 4 did not find a significant change in students’ academic outcomes (Dafouz & Camacho-Miñano, 2016; Zaif et al., 2017). These contrasting findings highlight the need to investigate specific implementation issues, EMI course designs and students’ motivations within the Vietnamese EMI context under scrutiny.

In terms of EMI implementation, Vietnamese universities struggle to adapt programmes designed in English-speaking countries to fit local requirements. Due to inadequate national policy guidelines and a lack of pedagogy training specific to EMI for content lecturers, Vietnamese lecturers grapple with delivering foreign-borrowed materials through their limited English proficiency (D. H. Tri, 2023). This lack of contextualisation and EMI-specific training is consistent with other emerging
contexts in the Asia-Pacific region, calling for contextual awareness and clarity at the macro policy-making level (Nguyen et al., 2017)

In terms of EMI programme design, a typical EMI curriculum comprises of 140 credits, and students were required to complete these credits within the four-year study period. As a result, most semesters were densely packed with over 10 modules for each year (Ngo, 2019). This leads to considerable pressure on students to manage the workload effectively within four years. A similar review of the course details in the current study can be conducted to compare the curriculum structure and academic demands placed on EMI students. This comparison can provide valuable insights into the consistency and changes in the EMI program structure over time, helping to understand its impact on student’s academic experiences and overall performance.

In terms of students’ motivations, Nghia & Tran (2020) showed that first-year Vietnamese EMI students have diverse motivations, with a general focus on tangible outcomes like high scores and language certificates to enhance career prospects. However, research shows university students’ motivations also evolve over time. In the later stage of their studies, students tend to emphasise less on subject content but more focus on employability and independent study skills (Jacobs & Newstead, 2000). This shift in priorities, combined with the heightened academic workload for final-year students, may explain the observed decline in academic performance among EMI students.

Another question of interest is as to why the learning loss occurred so late in the final year of studies. In year 3, students may still be adjusting and experiencing a learning curve (Aizawa et al., 2020; Kamaşak et al., 2021), yet, when they reach their final year, students are expected to have become familiar with the learning environment and academic requirements. In this study, EMI students seemed to have reached a plateau in their learning, leading to less advancement in their academic progress as one may expect. The concept of a learning plateau refers to a phenomenon where efforts and practice yield no perceptible progress in acquiring new skills or knowledge (Richards, 2008; Yi, 2011). This phenomenon is well-documented in the context of learning a second language (L2 English) but less explored in EMI learning.

The mechanism of a learning plateau can be explained as follows. Initially, students might be motivated by the excitement of learning a new language, driving their enthusiasm and efforts (Yi, 2011). However, as time goes on, this novelty may wear off, impacting their motivation to perform (Yi, 2011). The later stages of EMI
studies can add stress to students, especially in terms of graduation and job applications, leading to anxiety. The learning plateau identified in this study can be linked to Vygotsky's zone of proximal development (ZPD) (Vygotsky & Cole, 1978), which refers to the gap between a learner's actual development level (independent problem-solving) and their potential development level (problem-solving with guidance or collaboration with more capable peers). According to the social constructivist view of learning, development occurs when learners internalise the next developmental zone through mediation from others, primarily through social interactions (Eun, 2019; Vygotsky & Cole, 1978). Instruction should focus on functions that are ready to develop with appropriate support from more knowledgeable others (Eun, 2019). One plausible reason for the learning plateau in EMI contexts is the level of support available to students. While the Business Studies EMI curriculum may be equally demanding in all contexts, the presence of language support systems, such as English for Academic Purpose and English as a Foreign Language programmes, can significantly enhance students' learning efficiency. In the Vietnamese institution in this study, no such support scheme was in place, and students often relied on private tutoring to compensate for their learning loss over time.

In summary, the study observed a learning loss among EMI students, similar to the loss in English proficiency in Chapter 4. Challenges arise for students lacking prior EMI exposure and facing disciplinary differences. The Vietnamese EMI context also faces challenges at multiple levels of EMI implementation. The EMI curriculum can be demanding and stress-inducing, especially for final-year students. Further exploration of students’ changing motivations and learning plateaus is needed. Language support systems can play a crucial role, and their absence may lead to students seeking private tutoring. The next part of the discussion investigates the influence of social milieus on EMI students’ academic outcomes.

5.5.2 The equity of EMI effectiveness: content learning

Based on the Bourdieusian theory of capital, including economic, social, and cultural capital, this study proposed that higher social, economic, and cultural capital groups are more likely to yield higher academic outcomes in the EMI programme. In terms of social capital, the study found that students who attended selective high school attendance, did not necessarily gain an advantage in academic progression when compared to their peers. This finding is consistent with current research from
other contexts (Anderson et al., 2016; Clark, 2010). Three main factors could account for this equity. First, language barriers may alter the learning process. Given the students learned with English as their second language of instruction program, they may have faced language barriers in fully comprehending and expressing themselves in academic English, which is the medium of instruction in the university-level Business course. As discussed in Section 4.5.1, some students expressed the language quality of instructors in the EMI programme, who even had to resort to code-switching to explain academic concepts to the students. The heavy language barrier, coupled with the decline in English proficiency experienced by EMI students may lead to difficulty in understanding lectures, reading academic texts, and writing assignments. This is consistent with what was found earlier in other Asian EMI contexts (Kamaşak, Sahan & Rose, 2021; Rose, Curle, et al., 2020; Walkinshaw et al., 2017).

Second, the lack of appropriate support system may cause different levels of academic content attainments amongst students, particularly on those attending the EMI course in which challenges are both on English and subject content. Those who attend selective high schools may have received extensive support and guidance from their high school teachers and counsellors but may not have the same level of support and resources at the university level. This lack of support could affect their ability to manage the workload and adjust to the demands of a university-level Business course. This adds further evidence to the call for more institutional support for EMI students in university settings (Aizawa & Rose, 2019; Sahan et al., 2021).

Finally, there may be differences in motivation and study habits among students from the courses and from different prior educational backgrounds. VMI students may be more motivated to make up for the lack of English formal training in their university course by exerting more effort and afforded to so because of their familiarity of Vietnamese as the instructional medium. In contrast, EMI students may experience a decline in needed effort and motivation to complete their last year of university education. Since EMI students are also more likely to have attended selective high schools, they may have been used to excelling academically without putting in much effort or may not have developed effective study habits. This could lead to a lack of motivation and difficulty in adapting to the higher expectations and demands of a university-level Business course. Current research has investigated motivations of universities to adopt EMI programme (Xu, Rose, McKinley & Zhou, 2021; Altbach & Knight, 2007) yet there remains a lack of study to investigate the motivations of participating students from different prior backgrounds on joining EMI.
In terms of cultural capital, students who have a high level of cultural capital, measured through private English tuition, may experience greater learning loss in their EMI programme. One possible explanation is that attending private English tuition may lead to an overreliance on rote memorisation of the language rather than a deep understanding of the concepts being taught in Business courses. This could lead to a situation where students can demonstrate some proficiency in English but struggle to apply this knowledge to their coursework, leading to lower performance overall. It is also possible that attending private English tuition is a symptom of larger socio-economic factors that are negatively impacting the performance of these students. For example, students who are attending private English tuition may be doing so because they lack access to other resources or support systems that could help them perform better in Business courses, such as tutoring or mentoring programmes.

In terms of economic capital, the study did not find a significant association between having a higher household income level and academic progression among EMI students. According to Bourdieu’s theory, having a high level of economic resources is not directly predictive of academic success because economic capital is just one type of capital in the larger system of different forms of capita. This indicates other forms of capital such as social and cultural capital which can be more important in determining higher performance for students. In this study’s context, students who have more cultural capital such as familiarity with the instructional language, can perform better regardless of their economic backgrounds. On the other hand, EMI students who lack the cultural capital of learning through their mother tongue, struggle to perform well even if they come from a higher-income family.

5.6 Summary

The synthesis of both quantitative and qualitative findings presents a comprehensive and nuanced understanding of the complexities underlying student experiences in both Vietnamese-Medium Instruction (VMI) and English-Medium Instruction (EMI) programmes. The empirical results challenge conventional assumptions derived from Bourdieusian analysis, revealing a more intricate interplay of factors influencing academic success and learning outcomes.

Contrary to Bourdieu’s predictions, the quantitative analysis demonstrates that certain markers of social and cultural capital, such as attending selective high
schools and receiving private English tuition, do not guarantee a direct positive impact on academic progression for EMI students. This challenges the simplistic notion that elite educational institutions and additional language support inherently lead to higher achievement. Instead, the study's findings emphasise the multifaceted nature of academic success in EMI programmes, where factors such as language barriers, support systems, motivation, and study habits are equally influential.

The quantitative analysis suggests that social and cultural capital's effects are mediated by a range of factors, leading to a call for a holistic approach to understanding student experiences and designing effective interventions in EMI programmes. The qualitative analysis, guided by a social constructivist learning theory, enriches the narrative by delving into the intricate dynamics of language, culture, context, and cognitive development. It underscores the dual-edged nature of the sociocultural context, presenting both opportunities and challenges for content learning experiences. The importance of harmoniously integrating global perspectives and local realities is highlighted through the voices of VMI and EMI students.

The pivotal role of language as a mediator in content learning emerges consistently across both contexts. VMI students’ experiences showcase how familiar language acts as an empowering scaffold, while EMI students navigate the delicate balance between instructional language and their mother tongue. The Zone of Proximal Development (ZPD) concept emphasises the significance of language scaffolding in sociocultural and cognitive development, with VMI students benefiting from enriched ZPD through language familiarity and EMI students facing challenges related to language proficiency and support mechanisms. The interplay between prior knowledge and schema theory further underscores the differences and similarities between VMI and EMI experiences. VMI students seamlessly integrate new concepts within existing cognitive frameworks, reflecting schema theory's principles. In contrast, EMI students’ struggles with linguistic barriers emphasise the importance of linguistic preparedness for effective schema application.

Collectively, these analyses contribute to a comprehensive understanding of the multifaceted factors that influence student experiences and outcomes in both VMI and EMI programmes. They challenge assumptions about the direct influence of social and cultural capital, highlight the intricate interplay of language and cultural
contexts, and underscore the crucial role of pre-existing mental frameworks in shaping learning experiences. These findings provide insights for educational institutions, researchers, and policymakers to craft effective and holistic approaches to fostering academic success in diverse instructional contexts.
Chapter 6 Self-efficacy Change

6.1 Overview

This chapter explores the effectiveness, equity, and perceptions of English Medium Instruction (EMI) on students' self-efficacy outcomes from the third year to the fourth year of studies. To explore the effectiveness of EMI on students' self-efficacy, I analyse longitudinal data over two academic years to quantify and interpret the change in students' level of self-efficacy. To examine the equity of EMI effectiveness, I run an interaction term analysis between students' socioeconomic backgrounds and their self-efficacy outcomes within the EMI programme. Finally, to capture how students perceive the effectiveness of medium of instruction on self-efficacy, I draw on qualitative data from focus groups, open-ended questionnaire, and semi-structured interviews with participating students over two years from 2021 to 2022. In parallel with the overarching research questions in Chapter 2 Section 2.8, the chapter aims to address the following sub-questions:

- RQ 1.3: What is the impact of EMI participation on self-efficacy outcomes from Year 3 to Year 4, when compared to VMI participation in Vietnam?

- RQ 2.3: How does the effect of EMI on self-efficacy outcomes vary across students with different levels of economic, social, and cultural capital?

- RQ 3.3: How do students perceive the relationship between medium of instruction and self-efficacy gains?

The chapter is organised as follows. The next two sections discuss the longitudinal changes and regression results observed from the third to fourth year of their studies, in response to RQ 1.3. Consequently, I conduct an analysis of interaction terms using background variables, EMI participation, and self-efficacy outcomes, in response to RQ 2.3. The fourth section reports qualitative findings, offering insights into students' perspectives concerning the relationship between medium of instruction and self-efficacy, addressing RQ 3.3. The fifth section discusses the results, followed by the concluding section with the key insights and policy implications.
6.2 The effectiveness of EMI: self-efficacy

6.2.1 Descriptive statistics

To measure the change in self-efficacy for EMI and VMI Business students, self-efficacy scaled data were collected at the start of two consecutive academic years from 2021 to 2022. The composite score from the self-developed self-efficacy questionnaire served as a proxy measure of students’ level of self-efficacy in this study. Table 13 presents descriptive statistics concerning self-efficacy variables among students in year 3 and year 4 of studies. The data includes both EMI and VMI cohorts.

<table>
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<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Median</th>
<th>Min</th>
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<td>EMI self-efficacy Y3</td>
<td>50</td>
<td>3.7</td>
<td>0.4</td>
<td>3.6</td>
<td>2.7</td>
<td>4.9</td>
</tr>
<tr>
<td>VMI self-efficacy Y3</td>
<td>61</td>
<td>3.5</td>
<td>0.4</td>
<td>3.4</td>
<td>2.3</td>
<td>4.6</td>
</tr>
<tr>
<td>EMI self-efficacy Y4</td>
<td>50</td>
<td>3.7</td>
<td>0.3</td>
<td>3.7</td>
<td>3.2</td>
<td>4.3</td>
</tr>
<tr>
<td>VMI self-efficacy Y4</td>
<td>61</td>
<td>3.7</td>
<td>0.4</td>
<td>3.7</td>
<td>2.3</td>
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</table>

For the EMI cohort, the mean self-efficacy score remains consistent over the two years, both being at 3.7, which is slightly leaning towards the statement of “I can somewhat do it/agree” (Level 4) than a neutral level of 3. The Likert scale has 5 levels from 1 to 5 and is detailed in Appendix 2. The score suggests that, on average, EMI students maintain their level of self-efficacy over the time. The standard deviation for EMI group decreases slightly from 0.4 in year 3 to 0.3 in year 4. The decline indicates the self-efficacy scores in year 4 are more concentrated around the mean compared to Year 3, implying reduced variability in self-efficacy level. The median for EMI self-efficacy score remains stable at 3.5 in both Year 3 and Year 4, which suggests the middle value of self-efficacy scores within the EMI cohort did not change significantly over the same period. The range of EMI self-efficacy scores narrows from 2.2 (Year 3: 2.7 – 4.9) to 1.1 (Year 4: 3.2 – 4.3), indicating the spread of scores has decreased and a more concentrated distribution of self-efficacy scores in Year 4.

By comparison, within the VMI cohort, the self-efficacy score remains relatively stable across the two years, both being at around 3.5 and 3.7, respectively. The relative stability indicates a consistent average level of self-efficacy in VMI. Likewise,
the standard deviation for the VMI self-efficacy score remains constant at 0.4 in both Year 3 and Year 4, which implies the variability of self-efficacy scores among VMI students did not change significantly between the two years. The median score slightly increased from 3.4 in Year 3 to 3.7 in Year 4. The range of VMI self-efficacy narrows from 2.3 in year 3 to 2.2 in year 4. Similar to the EMI cohort, this indicates a reduction in the spread of self-efficacy scores in year 4 for the VMI one.

Overall, whilst there are subtle differences between year 3 and year 4 results in both VMI and EMI cohorts, the overall patterns indicate relatively stable levels of self-efficacy across the two years. The EMI cohort experience a slight reduction in variability of the scores whilst the VMI cohort demonstrate a slight increase in the mean scores over time.

### 6.2.2 Item-level changes in self-efficacy for EMI students

The composite self-efficacy scores in Table 14 give us an overall pattern of change among students. As the self-efficacy questionnaire contains 18 items to assess students’ self-efficacy in General English, Business English and Business Studies, the next section explores the change in these individual items among students. The stacked bar chart in Figure 7 illustrates the self-efficacy responses of EMI students in year 3.

**Figure 7** Self-efficacy level by item of EMI cohort Year 3
The chart provides a visual representation of how respondents perceived their self-efficacy across different questionnaire items. In terms of self-efficacy in Business English-related tasks, the results reveal that EMI students in Year 3 reported a high level of self-efficacy in tasks associated with Business English, such as ‘drafting business email’ and ‘comprehension of English stories’. This suggests that students felt confident in their language skills for practical business communication. However, for academic-related tasks like ‘comprehension of Business lectures’, ‘completing coursework’, and ‘awareness of journal research’, the results were mixed. Some participants reported low self-efficacy, indicating a lack of confidence in these specific academic domains. As the results indicate lower self-efficacy levels in academic tasks, it may infer that EMI students might have struggled with understanding complex academic content in English and faced academic challenges in their EMI learning.

By comparison, figure 8 presents the self-efficacy levels of EMI students in year 3.

![Figure 8 Self-efficacy level by item of EMI cohort Year 4](image)

**Figure 8** Self-efficacy level by item of EMI cohort Year 4

The results demonstrate shifts in self-efficacy levels compared to the previous year. After one year, the majority of respondents (more than 50%) expressed increased confidence in tasks like ‘drafting business emails’, ‘comprehending English stories’, ‘being aware of journal research’, and ‘participating in class discussions’. This
suggests that students had gained more confidence in practical and research-related tasks. Tasks requiring more complex application and evaluation of business knowledge showed lower self-efficacy levels. For instance, for 'evaluation of Business news', no students reported the highest self-efficacy, and only around 30% felt somewhat confident. This indicates that students struggled with tasks demanding critical analysis and evaluation. In comparison to Year 3 (Figure 7), Year 4 (Figure 8) showed improved self-efficacy levels for general English tasks. For example, more students claimed high self-efficacy in 'self-introducing in English'. This might indicate an overall enhancement of student’s self-confidence in general language skills over time. Notably, in Year 4 (Figure 8), there was no instance of the lowest self-efficacy response ('I totally cannot do it'), suggesting a general improvement in students' confidence levels.

In summary, the comparative analysis of figure 7 and figure 8 suggests that over the two-year period, EMI students experienced changes in their self-efficacy perceptions. While they showed improvement in certain areas, challenges persisted in tasks requiring higher-order cognitive skills and content understanding. These findings have implications for curriculum design, teaching strategies, and support mechanisms to enhance students' confidence and competence in both language and content learning domains. It also underscores the importance of addressing academic challenges and fostering a supportive learning environment to promote well-rounded self-efficacy development among EMI students.

6.2.3 Item-level changes in self-efficacy for VMI students

As for VMI students' self-efficacy, figure 9 presents the results of the Year 3.
The findings reveal that VMI students reported the lowest levels of self-efficacy for tasks related to academic domains and General English. Tasks like ‘recognition of Business knowledge’, 'looking up English dictionary', 'explaining Business topics', ‘comprehension of English TV programmes', ‘comprehension of English stories', 'comprehension of Business lectures', and 'completing coursework' were areas of challenge. The results in Year 3 suggests that VMI students shared a low level of academic self-efficacy with EMI students during the same period. This implies that both groups faced similar challenges in terms of confidence in academic tasks. Furthermore, VMI students also demonstrated lower self-efficacy in General English tasks compared to their EMI peers, as indicated by their performance in tasks like ‘comprehension of English TV programmes', ‘comprehension of English stories', and 'looking up English dictionary'.

By comparison with VMI group’s figure for Year 3, the stacked bar chart in figure 10 visualised VMI responses on self-efficacy in Year 4.
For most task items, a significant majority of students (more than 50%) reported being ‘somewhat able to do it’ or ‘totally able to do it’. This indicates that VMI students in Year 4 generally exhibited high confidence in performing these tasks, suggesting an improvement in their self-efficacy perceptions over the year. However, for tasks involving higher complexity, such as ‘evaluating Business news’ (item 7) or ‘applying Business knowledge’ (item 18), more students reported being ‘somewhat able to do it’ compared to those who claimed ‘totally able to do it’. This mirrors the challenges observed in Year 3 and is similar to the findings for EMI students. These tasks might be areas where VMI students still lack confidence. The analysis notes a wide range of self-efficacy levels among VMI students for various language tasks, such as ‘self-introducing in English’ (item 1), ‘comprehension of English TV programmes’ (item 10), ‘comprehension of English phrases’ (item 12), and ‘looking up English dictionary’ (item 4).

In summary, an analysis of figure 9 and figure 10 suggests that VMI students faced challenges in academic and General English tasks, similar to EMI students. While Year 4 data indicated increased self-efficacy for certain tasks, higher complexity tasks remained areas of concern. This highlights the need for targeted interventions to enhance confidence and competence in these specific areas.
6.2.4 Paired-sample t-tests

Having examined the descriptive statistics and the item-level changes in students’ self-efficacy, I now delve into the statistical significance of these changes. First, I use in Table 14 paired-sample t-tests to statistically examine the significance of longitudinal change in self-efficacy scores for both VMI and EMI cohorts. The t-test analyses enable us to ascertain whether the observed change in self-efficacy scores are statistically significant and whether there are any other meaningful variations in self-efficacy. For the EMI cohort, the paired samples mean difference between year 4 and year 3 is 0.02, indicating a very small increase in self-efficacy over the one-year period (compared to the mean self-efficacy score 3.7 of EMI students, 0.02 is only a 0.5% change). The standard deviation (SD) of the mean difference is 0.07, with a standard error (SE Mean) of 1.5. The 95% confidence interval (CI) for the mean difference ranges from -0.11 to 0.15 and the t-value for this comparison is 0.3, which is not statistically significant (p > 0.001) based on the degrees of freedom (df) of 49. As such, no statistically significant difference in self-efficacy scores between year 3 and year 4 for the EMI cohort is observed.

In contrast, for the VMI cohort, the paired samples mean difference between Year 4 and Year 3 is 0.3, indicating a significantly larger increase in self-efficacy score over the same observed period (compared to the mean self-efficacy score for VMI students in Year 3 is 3.5, 0.3 is a nearly 10% increase). The standard deviation for the mean difference is 0.36 with a standard error of 0.05. The 95% confidence interval for the VMI’s group mean differences ranges from 0.2 to 0.4. The t-value for this comparison is 5.6, which is statistically significant (p < 0.001) based on the degrees of freedom of 60. The t-test results suggest that there is a statistically significant improvement in self-efficacy among VMI students from 2021 to 2022.

<table>
<thead>
<tr>
<th>Table 14 Paired t-test results of EMI and VMI self-efficacy score for Year 3 and Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paired samples</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>EMI Y4 and Y3</td>
</tr>
<tr>
<td>VMI Y4 and Y3</td>
</tr>
</tbody>
</table>

Overall, without accounting for any self-selection and background factors of students, the EMI cohort exhibits a non-significant change in self-efficacy, whereas
the VMI cohort experience a statistically significant increase in self-efficacy, indicating potential benefits of the VMI intervention in enhancing self-efficacy beliefs. Figures 11 and 12 visually demonstrates the t-test results for the VMI and EMI cohort respectively.

**Figure 11** Significant increase in self-efficacy for VMI cohort

**Figure 12** Insignificant change in self-efficacy score for EMI cohort

While the t-tests suggest that the EMI students do not experience a statistical change in their self-efficacy, while the VMI students enjoyed an improvement during
the observed period, the results alone may not provide a fair description of the effectiveness of EMI on students’ self-efficacy development. A multivariate regression analysis provides an appropriate tool to robustly quantify the impact of MOI considering other background factors on changes in self-efficacy. The regression analysis also allows for the hypothesis testing of statistically significant relationships, quantification of effect sizes, and control for potential confounding variables, contributing to a more comprehensive and nuanced understanding of the factors influencing self-efficacy changes for both cohorts.

6.2.5 Regression analysis

I continue to employ two regression models. First, a simple univariate regression between the two variables is used to directly compare the change in self-efficacy between VMI and EMI students, regardless of their socioeconomic background, denoted as $\text{Selfefficacy change}_i$. The coefficient of interest in this equation, denoted as $\beta_1$, quantifies the strength of the association between MOI and the change in English proficiency. The error term, represented as $e_{1i}$, captures unobserved factors that can affect self-efficacy score. The Equation (7) is presented as follows:

$$\text{Selfefficacy change}_i = \alpha + \beta_1 \text{MOI}_i + e_{1i}. \quad (7)$$

However, this direct comparison in Equation (7) may be biased because it solely reflects pre-test differences in students' self-efficacy levels. To mitigate this bias, four variables are introduced in Equation (8) to account for pre-test factors: English Entry Grade before university, household income, gender, and private tuition hours.

$$\text{Selfefficacy change}_i = \alpha + \beta_1 \text{MOI}_i + \beta_2 \text{Gender}_i + \beta_3 \text{Income}_i + \beta_4 \text{EngTuition}_i + \beta_5 \text{EntryEnglish}_i + e_{2i}. \quad (8)$$

While these variables may not capture all unobserved factors influencing self-selection, they offer a more comprehensive and nuanced comparison. The regression equation is described in Equation (8.2), with $e_{2i}$ being the error term, and $\beta_1$ remains our estimate of interest. Table 15 reports several noteworthy findings.
**Table 15** Regression results of EMI on self-efficacy change

<table>
<thead>
<tr>
<th></th>
<th>Column (1)</th>
<th>Column (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variable:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in self-efficacy level regression</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Medium of Instruction (VMI/EMI)</strong></td>
<td>-0.240***</td>
<td>-0.212**</td>
</tr>
<tr>
<td></td>
<td>( p = 0.003 )</td>
<td>( p = 0.011 )</td>
</tr>
<tr>
<td><strong>Entry English grade</strong></td>
<td>-0.067*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( p = 0.070 )</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>-0.030</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( p = 0.707 )</td>
<td></td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td>0.030</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( p = 0.434 )</td>
<td></td>
</tr>
<tr>
<td><strong>Weekly English tuition</strong></td>
<td>0.043</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( p = 0.372 )</td>
<td></td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>0.260***</td>
<td>0.655*</td>
</tr>
<tr>
<td></td>
<td>( p = 0.00001 )</td>
<td>( p = 0.061 )</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>111</td>
<td>111</td>
</tr>
<tr>
<td><strong>( R^2 )</strong></td>
<td>0.080</td>
<td>0.127</td>
</tr>
<tr>
<td><strong>Adjusted ( R^2 )</strong></td>
<td>0.072</td>
<td>0.085</td>
</tr>
<tr>
<td><strong>Residual Std. Error</strong></td>
<td>0.409 (df = 109)</td>
<td>0.406 (df = 105)</td>
</tr>
<tr>
<td><strong>F Statistic</strong></td>
<td>9.504*** (df = 1; 109)</td>
<td>3.043** (df = 5; 105)</td>
</tr>
</tbody>
</table>

**Note:** \(* p<0.1; ** p<0.05; *** p<0.01\)

First, in Column 1, which does not account for any pre-university factors, EMI students showed a statistically significant negative change in their self-efficacy score. Even when we include their own choice and pre-university advantages of EMI students in Column 2, we still observe a significant decline in their self-efficacy performance, compared to their VMI counterparts. The negative coefficient for EMI in Model (2) \( \beta_1 = -0.212 \) confirms that EMI students dropped their self-efficacy from the third to the final year of studies, compared to the VMI cohort.

The regression analysis also provides interesting correlations on the other background factors. The negative coefficient for Entry English Grade in Model (2) \( \beta_2 = -0.067 \) is statistically significant \( (p = 0.070) \), indicating that students with higher Entry English Grades before university tend to experience a more significant decrease in self-efficacy over the observed period. In contrast, Gender, Household Income, and Private English Tuition do not show statistically significant effects on the change in self-efficacy in Model (2), as their coefficients have \( p \)-values above
0.1. The result suggests that unlike pre-university English proficiency, these socio-economic factors do not play a significant role in influencing self-efficacy changes over time when accounting for medium of instruction and other background factors. In terms of model fit, model (2) provides a slightly better fit than Model 1, with a higher R-squared value (0.127 vs 0.080. This indicates that the inclusion of background factors improves the model’s explanatory power, and the coefficients in Model 2 are jointly statistically significant and important in explaining the changes in English proficiency (F-statistic with p < 0.1).

In summary, the key findings from Table 16 suggest that EMI participation has a strong and negative effect on and predictability of the changes in self-efficacy compared to VMI. The analysis also highlights the role of Entry English Grade as a significant inhibiting factor affecting the negative changes in students’ self-efficacy. The results provide insights into the factors contributing to self-efficacy changes among students in EMI and VMI contexts (effectiveness of EMI).

6.3 The equity of EMI effectiveness: self-efficacy

The previous section found that EMI Business students experienced a decline in self-efficacy compared to VMI students. In this section, I explore the equity of EMI effectiveness across EMI students with different economic, social, and cultural capital backgrounds.

6.3.1 Interaction term analysis

To explore the variations of the EMI effects, I employ a multiplicative interaction term analysis. The key idea is to evaluate the relationship between the medium of instruction and the background variables and how this relationship affects self-efficacy. As discussed in Chapter 2, Bourdieu’s theory posits that students’ social, economic, and cultural capital, should influence their academic outcomes both directly and indirectly through their participation in courses with English as the medium of instruction. I expect students with higher social capital (e.g., attending selective high school), higher cultural capital (e.g., having private English tuition), higher economic capital (e.g., coming from a higher household income) would experience less self-efficacy loss in an EMI programme.

Equation (9) describes the regression model that examines the relationship between changes in the self-efficacy score \( \text{Selfefficacy}_{\text{change},i} \) and the social background
variables, namely, Household Income \( (HouseholdIncome_i) \), Private English Tuition \( (PrivateEnglishTuition_i) \), Selective High School Attendance \( (Highschool_i) \).

\[
\text{Selfefficacy}_i = \alpha + \beta_1 MOL_i + \beta_2 HouseholdIncome_i + \beta_3 PrivateEnglishTuition_i + \gamma \text{interaction}_i + e_{3i} \tag{9}
\]

Similar to the previous chapter, I exploit an interaction term \( \text{interaction}_i \) between, respectively, one of the social background variables and the main variable of interest \( MOL_i \). \( e_{3i} \) is the error term, representing unexplained or random factors in \( \text{Selfefficacy}_i \) that is not accounted for by the independent variables in the model. Table 16 provides several findings.
### Table 16 Interaction of EMI on self-efficacy and background factors

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Self-efficacy loss</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td><strong>Medium of Instruction</strong></td>
<td>-0.470**</td>
</tr>
<tr>
<td>((VMI = 0; EMI = 1))</td>
<td>(p = 0.034)</td>
</tr>
<tr>
<td><strong>Household Income</strong></td>
<td>-0.009</td>
</tr>
<tr>
<td>(p = 0.849)</td>
<td></td>
</tr>
<tr>
<td><strong>Interaction of EMI and Household Income</strong></td>
<td>0.092</td>
</tr>
<tr>
<td>(p = 0.277)</td>
<td></td>
</tr>
<tr>
<td><strong>Private English Tuition</strong></td>
<td></td>
</tr>
<tr>
<td>(p = 0.415)</td>
<td></td>
</tr>
<tr>
<td><strong>Interaction of EMI and Private English Tuition</strong></td>
<td></td>
</tr>
<tr>
<td>(p = 0.728)</td>
<td></td>
</tr>
<tr>
<td><strong>High School Selectiveness</strong></td>
<td></td>
</tr>
<tr>
<td>(p = 0.067)</td>
<td></td>
</tr>
<tr>
<td><strong>Interaction of EMI and Highschool Selectiveness</strong></td>
<td></td>
</tr>
<tr>
<td>(p = 0.647)</td>
<td></td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>0.280**</td>
</tr>
<tr>
<td>(p = 0.016)</td>
<td>(p = 0.292)</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>111</td>
</tr>
<tr>
<td><strong>(R^2)</strong></td>
<td>0.092</td>
</tr>
<tr>
<td><strong>Adjusted (R^2)</strong></td>
<td>0.067</td>
</tr>
<tr>
<td><strong>Residual Std. Error (df = 107)</strong></td>
<td>0.410</td>
</tr>
<tr>
<td><strong>(F) Statistic (df = 3; 107)</strong></td>
<td>3.632**</td>
</tr>
</tbody>
</table>

**Note:** *\(p<0.1; \, ^*p<0.05; \, ^{*}{p<0.01}\*

The following sections will delve into the interpretations and analysis of the interaction terms results between EMI and various forms of capital on self-efficacy, including cultural, economic and social capital, offering equity-focused insights into students’ mastery of self-efficacy beliefs within the EMI setting.

#### 6.3.2 Interaction between EMI and economic capital

In Column (1), the interaction term between EMI and Household Income in Column (1) is statistically insignificant \((p = 0.277)\) with a small positive coefficient of 0.092.
This suggests that students who are from a high-income background and are in the EMI programme did not experience a significant change in self-efficacy compared to their lower-income counterparts. This result does not support the expectation of Bourdieu’s theory as set out in Chapter 3. Bourdieu’s theory proposes that students who possess stronger financial foundations may have greater access to educational resources such as private tutors, books, educational technology or learning materials that may enhance their learning experience and self-efficacy. Coming from a strong economic background means these students are financially stable, which reduces stressors related to basic needs such as housing, food, living costs and healthcare. When these basic needs are covered, students can focus on their studies and personal growth which can enhance self-efficacy. The negative coefficient found in this study counters this interpretation of Bourdieu’s theory and suggests that high household income might not necessarily benefit the EMI students.

6.3.3 Interaction between EMI and cultural capital

Column (2) discusses the heterogeneity of EMI effects across students with different levels of private English tuition. The interaction term between EMI and Private English Tuition is positive and not statistically significant (p = 0.728). This means the effect of EMI on self-efficacy does not vary significantly for students who receive different levels of private tuition within the EMI programme. The lack of significance again runs against Bourdieu’s theory that predicts having greater access to English tuition may induce higher self-efficacy, at least in General and Business English domains. The t-test result does not support the notion of cultural capital being an influential factor in differentiating self-efficacy levels among EMI students.

6.3.4 Interaction between EMI and social capital

Column (3) presents the differential effectiveness of EMI across the high school attainment of the students. The interaction between Medium of Instruction (MOI) and Highschool Selectiveness is again positive and not statistically significant (p = 0.647). It again provides a counter argument against Bourdieu's theory on social capital and its influence on education outcomes. Bourdieu’s theory suggests that students that attend exclusive and elite education can have better access to information about educational pathways, academic support, and career opportunities. This knowledge can empower students to set ambitious goals and
enhance their self-efficacy. Bourdieu’s theory on social capital also denotes selective high schools may have a higher concentration of academically motivated peers. Interacting with such peers during their early stage of academia can create a culture of achievement, a sense of self-pride that fosters self-efficacy. However, the lack of statistically significant results consistent with the predictions from Bourdieu’s theory calls for a further investigation in the Vietnamese context to reconcile the theory and our empirical results. I discuss the inconsistencies and offer explanations in Section 8.5.

In summary, the interaction analysis shows that none of the social, economic and cultural capital factors appear to have a statistically significant and positive impact on the effectiveness of EMI on self-efficacy, which is not supportive of predictions of the Bourdieu’s theory. The next section presents a thematic analysis of students’ perceived relationship between medium of instruction and self-efficacy formation.

6.4 Perceptions of EMI effectiveness: self-efficacy

Having examined the quantitative relationship between EMI and self-efficacy, I now report on the qualitative findings on students’ perceptions of the role of language of instruction in self-efficacy development. Data from a focus group discussion, open-ended questionnaire and semi-structured interviews were used to exploit the complexity and depth of students’ experiences in both medium instructional programmes. Based on Bandura’s self-efficacy theory framework that was previously set out in Chapter 2, Section 2.4.3, I coded the data collected into a thematic analysis. Each of these themes is discussed below along with interview excerpts to illustrate each theme.

6.4.1 Performance accomplishments

EMI students highlight the critical role of performance accomplishments in the enhancement of self-efficacy, aligning closely with Bandura’s self-efficacy theory (Bandura, Freeman & Lightsey, 1999). Lan asserted that her university experience has elevated her self-efficacy underscores the transformational impact of engaging in the EMI route as follows:

‘I think my university experience has boosted my self-perceptions in general,’

Lan’s sharing reflects the overarching positive impact that her educational journey has had on her self-concept. This can be attributed to the mastery experiences she encountered throughout her EMI studies, where her competence in using English
became more evident. The sense of mastery gained from studying in the EMI route is evident in her statement:

‘I do see myself more proactive and more confident using English in public than before.’

The specific reference to being ‘more proactive and confident’ implies a shift in her self-efficacy beliefs, driven by concrete instances of successfully using English in public contexts. Her assertion highlights the pivotal role of tangible achievements and positive outcomes in bolstering one's confidence.

Similarly, another EMI student, Hong shared her experience of becoming more confident in communicating in English with different audiences. His journey from a ‘shy communicator’ to one who ‘enjoys delivering public speaking and networking’ underscores the role of repeated positive experiences in shaping self-efficacy. Hong's ability to navigate diverse audience contexts reflects his growing mastery, underlining the influence of accumulated successes in altering his self-perceptions. This shift is characteristic of Bandura's emphasis on past successes as a driving force behind one's belief in their future capabilities.

Thach's journey from nervousness to comfort with using English further solidifies the impact of performance accomplishments. His statement, ‘Overall I have become much more comfortable using English,’ signifies a profound transformation driven by consistent exposure and practice. Thach's progression from insecurity to confidence is marked by his "good language sense with English," a direct result of his frequent engagement with the language. This change in self-perception is quintessential to Bandura's theory, wherein successful experiences foster a sense of mastery and drive enhanced efficacy beliefs.

By comparison, VMI students revealed a different mechanism through which the medium of instruction shapes their self-efficacy. Sa is a VMI student who shares her awareness of the limitations within the VMI environment and highlights her proactive efforts to compensate for the identified deficiency. In Sa’s words:

‘As I am constantly aware that VMI might not provide me with an English-speaking environment during my university years, I have been actively working hard to compensate this and this has somehow shaped my self-perceptions. I see myself as a self-conscious, resilient and ambitious VMI student who wants to pursue an English-related career after graduation.’

Sa’s self-perception as a ‘self-conscious, resilient, and ambitious’ student demonstrates the motivational impact of setting goals and actively working towards them. This is aligned with Bandura’s concept of performance accomplishments,
where engaging in successful actions fosters a sense of mastery and enhances self-efficacy.
By contrast, another VMI student, Phuong admits that her language of instruction does not significantly affect how she perceives her capability in English and content learning. Phuong shared:

‘I don’t think the language of instruction affected my self-perceptions much. I still see myself a Business major student with a strong foundation in Business and Economics and with a good knowledge of English.’

Her self-identification as a "business major student with a strong foundation" suggests that her identity is largely tied to her academic competence rather than the instructional language. While this may seem to deviate from the performance accomplishments concept, it is important to note that Phuong’s belief in her foundational knowledge may have been bolstered by past academic achievements, which is again aligned with Bandura’s theory that past successes can positively influence one's self-efficacy beliefs.

The narratives from EMI students consistently highlight the transformative impact of performance accomplishments on their self-efficacy beliefs. Lan, Hong and Thach all share experiences of tangible achievements that have significantly bolstered their confidence within the EMI courses. Their accounts are closely linked with Bandura’s theory, where mastery experiences are central to self-efficacy enhancement. These students demonstrate how engaging successfully with English in various contexts, from public speaking to business communication, leads to a heightened sense of competence and increased self-assurance. These mastery experiences serve as building blocks for their self-efficacy beliefs, as they provide concrete evidence of their capabilities. By comparison, VMI students' accounts also reflect the role of performance accomplishments. Sa’s proactive efforts to compensate for the lack of English-speaking environment and Phuong’s strong identification with her academic discipline reveal how self-efficacy can be shaped by a combination of mastery experiences and personal motivation. Sa’s self-consciousness and ambition stem from setting and working towards goals despite the limitations of her environment. Phuong's self-efficacy emphasises her academic foundation, suggesting that her past achievements have influenced her self-efficacy beliefs, even if not explicitly linked to language use.

Comparing the experiences of EMI and VMI students, we see that while both groups rely on performance accomplishments to develop self-efficacy, the nature and availability of these experiences vary based on the medium of instruction. EMI
students benefit from immersive and practical exposure to English, which consistently reinforces their confidence. In contrast, VMI students encounter barriers that hinder their practical engagement with English, impacting their self-efficacy development. The absence of opportunities for mastery experiences within the VMI context can lead to doubts about their capabilities, which can be then compensated with students’ strong motivations and past achievements.

6.4.2 Social modelling

Social modelling, a central concept in Bandura's self-efficacy theory, refers to the process by which individuals learn and develop behaviours, attitudes, and beliefs through observing and imitating the actions and experiences of others. It emphasises the role of social interactions and the influence of role models in shaping one's self-efficacy and behaviours. Social modelling occurs when individuals perceive similarities between themselves and those they observe, leading them to believe that they can achieve similar outcomes.

An EMI student, Ai acknowledged the impact of her EMI cohort on her identity which signifies the profound influence of shared successes on self-efficacy. Ai stated:

‘I think being with other EMI students in my cohort has definitely shaped my identity as a confident user of English and a well-trained Business graduate,’

This statement underscores the role of social comparison and collective achievements. The EMI cohort serves as a tangible reference group, allowing Ai to witness others' mastery experiences, which in turn strengthens her self-belief. Her awareness of the "advantaged position" she occupies due to her medium of instruction highlights the acknowledgment of her proficiency, reinforced by the success stories of peers. This recognition further amplifies her self-confidence, aligning with Bandura's notion that witnessing others succeed can inspire similar beliefs in oneself.

Similarly, Bao's experience of developing self-efficacy through support from professors and peers illustrates the role of social modelling. In Bao's words:

‘I had a lot of support from my professors and peers, who helped me to develop my language skills and build my confidence. I also took advantage of opportunities to practice my English, like participating in study groups and extracurricular activities.’
By engaging in study groups and extracurricular activities, this student gains exposure to successful behaviors and interactions, which in turn builds their confidence. The student's assertion aligns with Bandura's assertion that observing others' successful experiences can instill a sense of efficacy and empower individuals to replicate similar actions.

However, in an interview that took place in the second phase of the study which coincided with the lockdown period due to the pandemic, Bao reveals his struggles with online learning and limited social interactions, which hindered his ability to observe positive behaviours from his peers. His statement is:

‘This year has been really tough. All of our classes were online, and it was really hard to stay focused and engaged. With the switch to online learning, I feel like I have even less support than before. It's harder to communicate with my professors and classmates, and I don't have as many opportunities to practice speaking and writing in English.’

The absence of positive social modelling experiences, along with the challenges faced, contributed to the student's lowered self-efficacy. This exemplifies Bandura's concept that observing failures or lack of successes can result in decreased self-belief.

By comparison, Lan shared a viewpoint related to social modelling within the VMI context:

‘Being in an environment where the language is familiar has allowed me to connect more deeply with my classmates’ achievements. [...] For example, I remember a situation during a complex group project for our Business Ethics course. We had to analyse a real-life case study and present our recommendations. Several of my peers, who were known for their strong academic performance, took the lead in our group. [...] Seeing them confidently articulate their thoughts and engage the audience was inspiring. It gave me a tangible example of what’s achievable within our shared language context. I thought, "If they can do it, so can I.”

Transitioning to the VMI context, the interview excerpt with Lan provides a rich understanding of the influence of social modelling in a language of instruction that is familiar to the student. The example of observing peers excel in a complex group project not only underscores their understanding of the content but also their effective communication in the shared language. This experience served as a
positive model for the student, leading to increased self-efficacy. Witnessing peers confidently articulate their thoughts and engage with the subject matter within the familiar language context provided a tangible example of attainable success. This is in line with Bandura's notion that observing successful models can bolster an individual's belief in their capabilities and foster a sense of self-efficacy.

Overall, the interview data showcases the pivotal role of social modelling in shaping individuals' self-efficacy beliefs within the contexts of both EMI and VMI. Positive models, whether in the form of peers, professors, or others, contribute to enhancing self-confidence and the belief that individuals can achieve similar successes. Conversely, the absence of positive modeling experiences or facing challenges that limit observation can lead to decreased self-belief. This interplay between social modeling and self-efficacy aligns closely with Bandura's self-efficacy theory, highlighting the significant impact of observing others on the development of one's beliefs and behaviors.

6.4.3 Verbal persuasion
Verbal persuasion, as defined in Bandura's social cognitive theory, refers to the impact of verbal feedback, encouragement, and guidance from external sources on an individual's self-efficacy beliefs. This feedback can come from peers, mentors, teachers, or role models and can either reinforce or challenge an individual's perception of their capabilities. Positive verbal persuasion involves receiving messages that enhance self-belief, while negative feedback can lead to doubts in one's abilities.

Within the EMI cohort, Hong's narrative reveals proactive efforts to improve language skills and understanding incrementally, resulting in increased confidence. This proactive approach aligns with Bandura's assertion that self-efficacy is fostered through deliberate actions and positive verbal reinforcement.

In particular, Hong shared:

‘I attend extra study sessions and office hours with my professors, and I work with a tutor to improve my language skills. I also try to break down the material into smaller, more manageable parts and focus on building my understanding incrementally. It's a slow process, but I think it's helping me gain confidence and feel more capable.’
On the other hand, Hanh's interview data suggests that a lack of sufficient verbal persuasion and support during challenging times can negatively impact self-efficacy. The desire for more language practice sessions, one-on-one meetings with professors, and interaction with classmates indicates that they perceive these interactions as opportunities for positive verbal reinforcement that would have helped them feel more connected and motivated. The absence of such support led to feelings of isolation, affecting their self-efficacy.

Hanh's statement, ‘I think more support and guidance would have been really helpful. Maybe some extra language practice sessions, or more one-on-one meetings with the professors […]’ emphasises the potential impact of positive verbal persuasion on maintaining a sense of connectedness and motivation, aligning with Bandura’s theory.

By contrast, within a VMI setting, Tuyet revealed a contrasting narrative:

‘I started as an English major from gifted high school so my English level is already of high level where I can comfortably use English in various contexts. Learning VMI does not lower my self-efficacy because I already secured a solid foundation in English skills and knowledge prior to my VMI participation.’

Tuyet’s claim highlights the role of pre-existing positive verbal persuasion in mitigating the potential adverse effects of limited verbal reinforcement within a VMI setting. Their solid foundation in English language skills enables them to comfortably use English across various contexts. This example underscores the significance of prior positive verbal reinforcement in buffering against the impact of reduced verbal persuasion.

In summary, the presented interview data underscores the pivotal role of verbal persuasion in shaping self-efficacy beliefs, particularly within the context of language of instruction. Positive verbal feedback, consistent interactions, and affirmation emerge as crucial elements in bolstering self-efficacy. Conversely, insufficient verbal persuasion and limited language practice can contribute to diminished self-efficacy. This highlights the importance of fostering an environment rich in positive verbal reinforcement to nurture the development of self-efficacy, particularly in situations where language holds considerable significance.
6.5 Discussion

The following section discusses the possible explanations for the changes in self-efficacy beliefs, students’ perceptions and the interaction between EMI students’ backgrounds and their attainment within their EMI programme.

6.5.1 The effectiveness of EMI on self-efficacy and students’ perceptions

Both quantitative and qualitative results from Chapter 6 indicate no statistical alteration in the self-perception of EMI students on a variety of self-efficacy items, even though they suffer from a decline in both English proficiency and academic content learning as identified in Chapter 6 and Chapter 7. There are a few potential reasons for such a maintained level of confidence of the EMI students. First, because of their higher economic, social, and cultural capital before entering the EMI programmes, these students already have a higher level of confidence before entering university. Because the students choose to enroll in the more demanding and expensive course with English as the instructional medium, as explored in Chapter 4, they establish a more confident approach in self-evaluation when comparing with other students. Such pre-university level of self-efficacy helps with the retaining of their confidence regardless of the actual learning outcomes over the two years of studies (Johnson & O’keeffe 2016). Second, the sustained self-confidence is a result of the mismatch between students’ self-expectations and their academic performance, which has been discussed in the education literature (see Gunarathne et al., 2021; and Maloshonok & Terentev, 2017, for recent discussions on the expectation-performance gap in business and management education). Finally, perhaps more empathetic to the EMI students, the unchanged self-efficacy may have come from the composite nature of the index construction. As the measure for self-efficacy is a totaling of different questions capturing different views about the students’ perceptions of their own performance on tasks with varying difficulty levels, it only offers a holistic view of students’ self-perception. When delving into the granular context of the self-efficacy measure, several interesting patterns emerge. EMI students are only confident in certain tasks in two domains: general English and business English, which partly reflect their English proficiency and their preparedness before entering university. They are least confident when asked about their competence in academic content – business knowledge
applications and evaluations. These results are consistent with the decline observed in the GPAs of EMI students over the one-year period of tracking.

The improved self-efficacy of VMI students can be explained by at least three observations. First, VMI students are enrolled in the traditional higher education setting with a far larger cohort and already established learning and evaluation expectations. Even though they may have set a lower expectation about their own competency, the room for improvement is more pronounced compared to that of their EMI counterparts. As such, over the last year of study, VMI students improved, despite slightly, their self-efficacy to the same level of EMI students. Second, because of their learning advantages as having the academic content delivered in their first language, these students set a more realistic expectations in their English proficiency. They also experience a decline in English proficiency but improve their content learning outcomes with higher GPAs in Year 4. These changes are consistent with their self-observations when we break down the self-efficacy index. VMI students start Year 3 with low levels of confidence across tasks related to the three domains: general English, business English, and academic content. In Year 4, the students express their improved confidence on all three domains. It is important to note that despite these improvements, on average, VMI students in Year 4 are equally self-efficacious to EMI students, highlighting the importance of having a lower pre-university level of self-efficacy.

Several important policy implications emerge to address the lack of effectiveness of EMI on building students’ self-efficacy. First, academic courses should focus on promoting self-regulation skills among students, particularly on those who face extra academic challenges such as studying in a second language. Practical policies can include providing guidance on goal setting, time management, and study skills to help students effectively manage their academic workload and improve their self-efficacy. Second, institutional support should be well in place to offer support services and resources to help students enhance their self-efficacy. Study skills and time management programmes can be implemented to assist students in developing effective learning strategies and overcoming challenges related to academic stress and workload. Finally, as hinted in Chapter 6, the curriculum in EMI courses, in the Vietnamese context, can benefit from a review and upgraded design. In these courses, the curriculum should consider the task-specific nature of self-efficacy. Learning objectives, activities, and assessments should be aligned to provide students with opportunities to develop and demonstrate their self-
efficacy in different areas of learning, both developing general English, academic English, and ensuring the necessary acquisition of academic content learning appropriate to the university level. Policies can involve incorporating a variety of tasks and assessments that allow students to apply and evaluate their knowledge in real-world contexts, or expanding internship and job placement opportunities to a more global context so that EMI students can improve not only their English language but also subject-specific knowledge learning skills.

6.5.2 The equity of EMI effectiveness: self-efficacy

Socio-economic backgrounds do not have any statistical impact on the effectiveness of EMI on students’ self-efficacy. This result is not surprising given there lacks any evidence for a statistical effect of enrolling in the EMI course on improving self-efficacy. Bandura’s (1986) self-efficacy theory can offer a reconciliation of the empirical results. In brief, the theory emphasizes the role of individual agency, in this case, the students, being driven by personal preferences, motivation, and perceived benefits instead of being constrained by social structures and institutional arrangements populated in Bourdieu’s social capital theory (1984). As such, social, economic, and cultural backgrounds are less relevant in determining a person’s self-efficacy. In the qualitative analysis, VMI students demonstrated a much more driven and determined approach to complete the courses as successfully as possible to compensate for their lack of English exposure and other advantages enjoyed by their EMI counterparts. The improved self-efficacy observed for VMI students attests to this theory.

6.6 Summary

EMI participation is associated with a strong and negative change in self-efficacy compared to VMI participation. For item-level change, EMI students show a sustained level of confidence with English-related tasks whereas they continue to perceive academic tasks as challenging over two years. In year 4, VMI students perform with an improved level of self-efficacy compared to their starting level in Year 3, in both English and academic task domains. None of the social, economic, and cultural capital factor have a statistically significant and positive impact on the effectiveness of EMI on self-efficacy. Social, economic, and cultural backgrounds are found less relevant in determining a person’s self-efficacy. The perceptions of EMI and VMI students are distinct yet complementary on the relationship between instructional medium and self-efficacy development. Qualitative findings reveal
contributing factors towards self-efficacy formation which includes the accessibility to opportunities for one to master their skills (mastery experience), the availability of positive role models for one to lean on and get support from (social modelling), and the presence of positive feedback and affirmation on one’s capability (verbal persuasion). VMI students demonstrated a much more driven and determined approach to complete the courses as successfully as possible to compensate for their lack of English exposure and other advantages enjoyed by their EMI counterparts.

Explanations for the sustained level of self-efficacy among EMI students includes their pre-existing high level of confidence prior to entering the EMI courses, the mismatch between students’ expectations and their academic performance and the composite nature of the self-efficacy index. These observations have been discussed in the literature and this thesis provides important additional evidence for such a gap and mismatch. Practical policies to address this pattern include the promotion of self-regulation skills, institutional, and pastoral support for struggling students and an overhaul of the EMI programme to be more context sensitive. It is paramount to understand and address the lack of effectiveness of EMI on developing participating students’ self-efficacy when the non-EMI students clearly become more self-efficacious over time.
Chapter 7 Conclusion

7.1 Thematic summary of key findings

This study aimed to understand the effectiveness, equity, and perceptions of EMI on students’ learning and development at a Vietnamese university. I empirically examined the three topics by looking at three outcomes (i) English Proficiency, (ii) academic content learning, and (iii) self-efficacy building. The empirical analysis used a longitudinal dataset collected over two years of 2021 to 2022 at a leading Vietnamese university that offers an established EMI programme. I employed a sociological theoretical framework based on Bourdieu’s theory of capital to form a testable hypothesis (H2) on the equity of EMI effectiveness on its participants. Detailed findings were presented in Chapter 4, 5, and 6. This section or chapter provides a thematic summary of key findings according to the research questions specified in Chapter 4.

In response to the second hypothesis of this study, which is formulated as follows, H2: students with higher social, economic, and cultural capital are more likely to achieve higher language proficiency, content learning, and self-efficacy outcomes in the EMI programme, the study do not find evidence to support the H2 hypothesis either.

Research Question 1 (Effectiveness of EMI)
What are the impacts of EMI on English proficiency, academic content learning, and self-efficacy on participating students compared to non-EMI students?

First, the empirical analysis shows that EMI participation has a strong and positive effect on the changes in English proficiency compared to VMI, even though both groups experience a decline in proficiency. Possible explanations for the change in English proficiency among EMI and VMI students include temporal trajectories, content-driven exposure, learner motivation, socio-pragmatic considerations, and contextual relevance collectively. Second, EMI participation has a strong and negative effect on and predictability of the changes in content learning compared to VMI. The study observed a learning loss among EMI students. Challenges arise for students lacking prior EMI exposure and facing disciplinary differences. Findings indicated that the Vietnamese EMI context also faces challenges at multiple levels of EMI implementation. The EMI curriculum was found to be demanding and stress-
inducing, especially for final-year students. Finally, EMI participation is associated with a strong and negative change in self-efficacy compared to VMI participation. For item-level change, EMI students show a sustained level of confidence with English-related tasks whereas they continue to perceive academic tasks as challenging over two years. In year 4, VMI students have a higher level of self-efficacy compared to their starting level in Year 3, in both English and academic task domains.

In response to the first hypothesis of the study, which is formulated as follows, \( H1: \) *EMI participation does not adversely affect students’ English proficiency, content learning, and self-efficacy compared to L1 medium of instruction, in Vietnam*, the study did not find evidence to support H1 hypothesis.

**Research Question 2 (Equity of EMI Effectiveness)**

How do the impacts of EMI identified in Research Question 1 vary across students with diverse academic and socio-economic backgrounds?

To investigate the equity of the EMI effectiveness in Vietnam, I employed an interaction term, analysis that captures the varying effect of participating in an EMI course on learning outcomes. First, regarding the effectiveness of EMI on language proficiency change, cultural capital in the form of private English tuition emerges as a significant negative moderator. Students receiving such private language tuition seem to suffer from a loss of English proficiency instead of gaining despite the exposure to the English language through academic content learning. The lack of significance in the interactions involving household income and high school selectiveness suggests that these factors are not strong moderators of language proficiency changes in the EMI context. As such, EMI programme seems to be equitable in the Vietnamese context when it comes to improving English proficiency.

Second, regarding the effectiveness of EMI on content learning, social capital and cultural capital present a statistically significant negative influence. Students with higher social capital, particularly those from selective high schools may not fare well due to language barriers, lack of support systems and differences in learning motivations. Students with higher cultural capital in form of having more private tuition also encountered learning difficulties. Students with high economic resources did not benefit more academically, highlighting the dominance of social and cultural capital in determining students’ success. I do not find evidence for an economic disparity in terms of academic learning outcome, while social and cultural factors...
seem to influence how students from various social and cultural backgrounds benefit from EMI courses. Finally, regarding the effectiveness of EMI on self-efficacy change, none of the social, economic, and cultural capital factors have a statistically significant and positive impact on the effectiveness of EMI on self-efficacy. Social, economic, and cultural backgrounds are found less relevant in determining a person’s self-efficacy.

Research Question 3 (Student Perception of EMI Effectiveness)
How do students perceive the relationship between the medium of instruction and three outcomes: (i) English Proficiency, (ii) academic content learning, and (iii) self-efficacy?

A qualitative approach is used to complement the preceding quantitative results. I design a set of open-ended questions to capture the perception of the students on the effectiveness of EMI. First, regarding the perceived relationship between MOI and English Proficiency, EMI students report that they enjoy a more conducive environment for holistic language growth, marked by exposure, resources, and support, while VMI students navigate a challenging landscape characterised by limitations and the need for individualised strategies. Second, regarding the perceived relationship between MOI and content learning, EMI and VMI students present both opportunities and challenges for academic success through their situated socio-cultural context, prior knowledge and academic foundations, the role of support systems and proficiency in the instructional language. Finally, regarding the perceived relationship between MOI and English Proficiency, EMI and VMI students’ perspectives are distinct yet complementary on the relationship between instructional medium and self-efficacy development. Qualitative findings reveal contributing factors towards self-efficacy formation which includes the accessibility to opportunities for one to master their skills (mastery experience), the availability of positive role models for one to lean on and get support from (social modelling), and the presence of positive feedback and affirmation on one’s capability (verbal persuasion). VMI students demonstrated a much more driven and determined approach to complete the courses as successfully as possible to compensate for their lack of English exposure and other advantages enjoyed by their EMI counterparts.
7.2 Academic contributions

This study contributes to the current education literature for its innovation in survey design, empirical analysis, and theoretical frameworks. The results are of interest to various stakeholders, including educators and policymakers.

First and foremost, the study's in-depth analysis of EMI participation trends over time within a prestigious Vietnamese university unveils crucial insights into the developmental trajectories of students. By comparing EMI and non-EMI groups using a unique longitudinal dataset, it offers a granular view of individual progress and facilitates inter-group comparisons. As the first EMI study in Vietnam to employ a comparative, longitudinal, mixed-methods design, it seeks to be methodologically innovative. By collecting diverse data on language and content learning gains over a span of two years and comparing EMI with VMI students, the research attains a comprehensive understanding of students content and language learning gains within the EMI context. This methodological innovation not only elevates the quality of EMI research but also equips educators and institutions with invaluable tools to assess and enhance their instructional practices. Because the data were collected during the Covid-19 pandemic, the protocol and procedure of the data collection will be of interest for researchers who wish to conduct distant data collection.

Second, using multivariate regression analysis, I provide new insights on how students from EMI and non-EMI courses perform in three areas: English proficiency, academic outcomes, and self-efficacy. Using interaction term analysis, I explore how the EMI effectiveness is affected by different student background, addressing the literature gap on the equity of EMI courses, particularly in an emerging country. Such insights can catalyse pedagogical improvements and encourage the adoption of tailored teaching strategies in higher education, both EMI and non-EMI, ensuring that students receive the support they need to thrive academically and improve their educational experience.

The third contribution is the study's utilisation of sociological theories on capital and cultural reproduction to explore the intricate relationships between the language of instruction, educational outcomes, and background factors in EMI. I summarise different views from different sociological theories to offer predictions on the differential effects based on socio-economic status, gender, and linguistic proficiency. The discussion is amongst the first to underscore the pressing need for equitable EMI policy interventions, guiding the empirical analysis of the thesis.
In conclusion, this thesis transcends academic boundaries to address pressing issues in education. Its contributions resonate with educators, policymakers, and institutions alike. By shedding light on the complexities of EMI participation, it paves the way for more informed decision-making and the creation of policies that promote inclusivity, ultimately fostering a more equitable and effective educational system.

7.3 Policy implications

This doctoral research has shed light on the effectiveness and equity of English-Medium Instruction (EMI) programmes within the Vietnamese higher education context. Throughout this thesis, we have explored the numerous advantages that EMI can offer in terms of language proficiency and academic learning outcome, and self-efficacy compared to the non-EMI students. It is equally evident that there are substantial challenges and disparities that must be thoughtfully addressed to fully harness these benefits and ensure that quality education is accessible to all.

7.3.1 The Effectiveness of EMI (Research Question 1)

First, the strong positive effect of EMI on English proficiency, even when both EMI and Vietnamese-Medium Instruction (VMI) students experience a decline, underscores the potential of EMI to enhance language skills. To capitalise on this, policymakers should focus on improving the quality of EMI language instruction and provide resources for additional language support. This could include offering extracurricular language classes, access to language labs, or online language resources. It is imperative that EMI students have the tools and opportunities for language growth. Measures to equalise access to EMI courses or language exposure opportunities include the establishment of financial assistance mechanisms, such as scholarships and targeted support for students coming from underprivileged backgrounds. By doing so, the financial barriers can be bridged to create a wider access to EMI courses and English, enabling a more diverse range of students to benefit from the opportunity.

Second, the negative effect of EMI on content learning, particularly for students without prior EMI exposure, demands a reevaluation of the EMI curriculum’s rigor and support systems. Policymakers should work closely with educators to streamline the curriculum, provide additional academic support, and ensure that students have access to necessary resources. Reducing the academic
stress associated with EMI courses, especially for final-year students, is vital for long-term success.

Finally, the negative change in self-efficacy among EMI students compared to VMI students indicates a need for interventions that bolster students' confidence. Institutions should prioritise fostering self-efficacy through workshops, counseling, and mentorship programmes. By providing opportunities for self-reflection, goal setting, and skill development, we empower students to take an active role in shaping their own educational journeys, which can significantly contribute to better outcomes. These initiatives can help EMI students navigate the challenges associated with the program and maintain a positive outlook on their academic abilities. These support mechanisms play a pivotal role in nurturing both the academic and personal development of students, ultimately enhancing their overall educational experience.

7.3.2 Equity of EMI Effectiveness (Research Question 2)

The varying impact of EMI on students from diverse backgrounds suggests the importance of targeted interventions. To address the negative impact of private English tuition on language proficiency, regulatory bodies and institutions should collaborate to assess the alignment of private tutoring with EMI goals. Guidelines and best practices should be established to ensure that private tuition supports rather than hinders language development. At a regulatory level, Regular assessments and oversight of private tutoring practices should be carried out to ensure their alignment with the goals and teaching methodologies of EMI programmes. Collaboration between educational institutions and private tutors can help establish guidelines and promote effective language support outside the classroom.

For vulnerable groups, such as male students experiencing English proficiency declines, despite not statistically significant, tailored support programmes and mentorship initiatives should be implemented. These programmes can address their specific needs and provide the necessary resources to excel in EMI courses. Additionally, the inclusion of diverse learning materials that cater to different learning styles can benefit all students.

In terms of curriculum design, policymakers should ensure that learning objectives, activities, and assessments align with students’ self-efficacy development. By incorporating tasks and assessments that allow students to apply
and evaluate their knowledge in real-world contexts, institutions can help students build confidence in their abilities.

7.3.3 Student Perception of EMI Effectiveness (Research Question 3)

Student perceptions are found to offer valuable insights into the relationship between the medium of instruction and various outcomes. EMI students’ positive perceptions of the conducive environment for language growth suggest that institutions should continue to provide exposure, resources, and support for language development.

Regarding content learning, institutions should consider the role of support systems in the instructional language. By providing academic support tailored to individual needs, institutions can help students overcome challenges and succeed in their studies. The distinct yet complementary perspectives of EMI and VMI students on self-efficacy development highlight the need for a balanced approach. Institutions should focus on creating opportunities for mastery experience, offering positive role models, and providing affirmation of students’ capabilities. Encouraging determination and a growth mindset among VMI students can help compensate for the advantages enjoyed by EMI students.

In conclusion, the policy implications derived from the research findings emphasise the importance of equalising access, reducing biases, enhancing support structures, and fostering individual agency within EMI programmes. These recommendations aim to ensure that EMI benefits are accessible to all students, regardless of their backgrounds, and that the educational experience is equitable and empowering.

7.4 Limitations and Future Work

There are limitations inherent in the design of the research. I will discuss two main points: the measure of English proficiency, and the general limitations of a mixed-method study. I offer potential remedies for the limitations that the future work could build upon.
7.4.1 Measuring English Proficiency

Using the DuoLingo test as a measure of English proficiency is a common approach and has its advantages, but it also comes with some potential limitations. The literature on the use of the DuoLingo test is rich and offers different considerations regarding its usefulness in determining a student's English proficiency. Nevertheless, this study adds to the current literature that uses other forms of measures such as IELTS, TOEIC, and OTP as a measure of English proficiency (see for one review at, Yuksel et al., 2021). In this section, I discuss six pressing limitations, some of which are not unique to the DuoLingo test.

First, like most other tests, DuoLingo offers a limited scope of assessment. The test assesses English proficiency primarily in the context of general language skills, including reading, writing, listening, and speaking. While these skills are undoubtedly essential, English proficiency in academic settings often involves specialised vocabulary and language structures that may not be fully captured by this test. Therefore, the test may not provide a comprehensive measure of a student's ability to engage with academic content in English.

Second, the test lacks contextualisation, which other current tests also suffer. The DuoLingo test is a standardised language proficiency test that does not consider the specific academic context of the students. In EMI programmes, students need to understand and produce discipline-specific language, which may not be adequately assessed by a general language proficiency test.

Third, the test can have a large variability. Language proficiency tests can sometimes yield varying results for the same individual when taken at different times. Factors such as test fatigue, test anxiety, or the test's particular format and content can influence scores. This limitation is also not specific to DuoLingo. It is essential to consider that a single test score may not fully represent a student's true proficiency level.

Fourth, the test was done online which has a limited ability to assess speaking and listening. While DuoLingo does assess speaking and listening skills, it may not do so as comprehensively as other language proficiency tests specifically designed for these skills. Because of the distant nature of the survey (during Covid-19), it was prohibited to enter testing centers for other tests. DuoLingo remained the most viable test for the study.
Fifth, students may have engaged in some preparation for the test. Some students may have undergone test preparation specifically for the DuoLingo test. This can influence their scores and may not accurately reflect their day-to-day English proficiency in an academic setting. Test preparation can include familiarisation with test formats and strategies, which can inflate scores. Due to the structure and communications before the data collection period, I believe this limitation is of less concern.

Finally, Standardised language proficiency tests like DuoLingo can have inherent cultural and linguistic biases that may disadvantage certain groups of test-takers. This bias can impact the fairness and validity of the test results. Designing a specific test for the Vietnamese context, despite being the best approach to overcome this limitation, is prohibitively expensive and falls outside of the scope of the study.

To address these limitations, future work can benefit from the use of a combination of assessment methods, including standardised language tests, academic writing samples, classroom performance evaluations, and even interviews to obtain a more comprehensive picture of students' English proficiency in an EMI context. Triangulating data from multiple sources can enhance the validity and reliability of the findings related to English proficiency.

7.4.2 The mixed-method research approach

This study uses an innovative mixed-method research approach to offer valuable insights into the effectiveness and equity of English-Medium Instruction (EMI) in the context of Vietnamese higher education. There remain several limitations that could affect the generalizability and interpretation of the findings.

Firstly, the sample size used in this research is a primary limitation. Data were collected from 111 participants, which, although substantial for a quantitative study, may not fully represent the diversity of experiences within Vietnamese higher education. Consequently, the findings might not be directly applicable to all universities or educational programmes in the country, and caution should be exercised when attempting to generalise the results.

Secondly, the longitudinal aspect of this study spans a two-year period. While this timeframe provides insights into the short- and medium-term impacts of EMI, it may not capture longer-term effects. The experiences and outcomes of students in EMI programmes might continue to evolve beyond the scope of this study.
Another aspect to consider is the use of self-reported data, such as income or pre-university performance, as a primary data source, collected through questionnaires, interviews, and focus groups. While efforts were made to ensure the accuracy and reliability of the data, self-reporting may introduce response biases, including social desirability bias, where participants may provide answers, they believe align with expectations or are socially favourable.

Furthermore, the qualitative analysis, while rich in providing context and depth, is inherently subjective. Interpretations of interview and focus group responses may vary among researchers. To mitigate this limitation, rigorous coding and triangulation techniques were employed to enhance the credibility and trustworthiness of the qualitative findings.

It is also important to acknowledge the presence of selection bias in this study. Participants voluntarily enrolled in EMI programmes, introducing a self-selection process that may lead to differences in motivations, language proficiency, and expectations compared to those who opted for non-EMI programmes. I address this concern with a battery of control variables, but the concern of selection bias remains.

The contextual specificity of the research should be noted as well. This study was conducted within the specific sociocultural and educational context of Vietnam. As such, the findings may not be readily transferable to EMI programmes in other countries or regions with differing linguistic, cultural, or educational dynamics. Moreover, educational policies and practices are subject to change over time. While this study offers insights relevant to the period of data collection, policy changes or reforms in the Vietnamese higher education system could impact the relevance of the findings in the future. The study primarily focuses on the business-related field. Variations in EMI effectiveness and equity across different academic disciplines were not extensively explored. Future research may consider examining these variations.

Potential response bias is also a consideration. Some participants may have been hesitant to openly express their opinions, particularly regarding critical aspects of EMI programmes. This could result in an underrepresentation of certain viewpoints. Recognising this bias during the pilot study and the low turnout of the focus groups, I switch the interview instruments to the 1-1 format to give the participants a safer and open environment to express their views.

Lastly, the data collection period partially coincided with the COVID-19 pandemic, which could have influenced students’ experiences and perceptions of
EMI. While efforts were made to account for this in the analysis, the pandemic's unique circumstances may have had unanticipated effects. I aimed to address this concern by using a longitudinal approach which address the effect of Covid-19, which affected both VMI and EMI students. As such, the effect of Covid-19 on the effectiveness of EMI is eliminated. Even though the effect of covid-19 is outside the scope of this study, it remains to be seen if the results would replicate in a different time.

Despite these acknowledged limitations, this research contributes valuable insights into the intricate dynamics of EMI in Vietnamese higher education and the wider EMI literature. Being aware of these limitations is crucial for the appropriate interpretation and application of the study's findings.

7.4.3 Final note

The future of English-Medium Instruction in Vietnam holds substantial promise, contingent on adjustments in policies and practices to ensure equitable access and effective outcomes. The recommendations articulated in this conclusion offer a comprehensive roadmap for policymakers, educational institutions, and stakeholders to create a more inclusive and impactful EMI educational landscape in Vietnam. By addressing these challenges and seizing these opportunities, Vietnamese higher education can continue to flourish in an increasingly globalised world.
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Appendix 1  Ethics approval

HREC/3915/Nguyen: HREC Favourable Opinion

This message confirms that the research protocol for the following research project, as submitted for ethics review, has been given a favourable opinion on behalf of The Open University Human Research Ethics Committee.

Project title: "Examining the implications of English versus Vietnamese Medium instruction programmes on students' English self-efficiency and proficiency"

HREC approval date: 16/03/2021

As part of your favourable opinion, it is essential that you are aware of and comply with the following:

1. You are responsible for notifying the HREC immediately of any information received by you, or of which you become aware which would cast doubt on, or alter, information in your original submission, in order to ensure your continued safety and the good conduct of the research.

2. It is essential that you instruct the HREC with any proposed amendments to your research, for example: a change in location or participants. HREC agreement needs to be in place before any changes are implemented, except only in cases of emergency where the welfare of the participants/ethics is at risk.

3. Your HREC reference number has to be included in any publicity or correspondence related to your research, e.g. when seeking participants or advertising your research, so it is clear that it has been approved by the HREC and adheres to OU ethics review processes.

4. Researchers should have discussed any project-related risks with their Line Manager and/or Supervisor, to ensure that all the relevant checks have been made and permissions are in place prior to the project commencing, for example compliance with IT security and data protection regulations.

5. Researchers need to have read and adhered to relevant OU policies and guidelines, in particular the Ethics Principles for Research with Human Participants and the Code of Practice for Research - [link](http://www.open.ac.uk/about/research/principles/ethics)

6. The Open University’s research office review procedures are fully compliant with the majority of research councils, professional organisations and grant awarding bodies’ research ethics guidelines. Where required, the management of evidence of OU HREC approval and can be included in an external research ethics review application. The HREC should be sent a copy of any external applications, and can subsequently be made available by the OU to referees.

7. At the end of your project you are expected to submit a final report to HREC. The purpose of the final report is to ensure that research being carried out is carried out in an ethical manner, any risks posed to participants have been dealt with if they have been adverse, and to outline the development of the ethical review process to ensure a continued high level of review. The final report template can be found on the [Guide Research Ethics website](http://www.open.ac.uk/about/research/principles/ethics).

Sent on behalf of the Human Research Ethics Committee

Dr Gunha Hensor  Dr Duncan Banks  Dr Alison Fox

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**RE: HREC/3915/Nguyen update on a minor adjustment in data collection - support from HREC**

To: An.Nguyen  Cc: Research-REC-Review

Dear An,

This all seems to be very well thought through and we are happy to support the amendment to data collection as presented. We wish you well with recruitment to these interviews and productive discussions to generate the data you need to address your research questions.

With best wishes,

Alison on behalf of HREC
Appendix 2  Questionnaire

Questionnaires on student agency Questionnaires on student’s English self-efficacy beliefs
These questions will also be provided in Vietnamese for participants’ choice of language use.

Please read the following questions respond with your current circumstances. The following questions are aimed at understanding your learning background and measuring your assessment of your agency within your chosen academic programme. Therefore, there is no right or wrong answer.

*Please remember we ask you to answer questions only if you feel comfortable doing so, and all responses are kept strictly confidential. You reserve the right to skip any questions that you do not feel comfortable answering.*

**First part: Student’s background information**

1. How old are you?
2. What is your gender?
   - Male
   - Female
   - Prefer not to say
3. Which course are you currently enrolled in?
   - Vietnamese as the Medium of Instruction (chuong trinh chuan)
   - English as the Medium of Instruction (chuong trinh chat luong cao)
4. Have you been exposed to English as the Medium of Instruction learning before? If so, how long?
   - No
   - Yes, number of EMI years prior to university
5. Which province/ city of Vietnam did you previously live in prior to university?
6. Which high school did you previously go to prior to university?
   - Selective, specialised high school
   - Standard high school
7. What is your father main’s job?
8. Does your father have any of the following qualifications?
   - Secondary Graduation Diploma (Tot nghiep Trung Hoc Co So)
   - High School Graduation Diploma (Tot nghiep Trung Hoc Pho Thong)
   - University Bachelor’s Qualification (Tot nghiep Dai Hoc)
   - Master’s/ Postgraduate Qualification (Tot nghiep Thac Si)
9. What is your mother’s main job?
10. Does your mother have any of the following qualifications?
   - Secondary Graduation Diploma (Tot nghiep Trung Hoc Co So)
   - High School Graduation Diploma (Tot nghiep Trung Hoc Pho Thong)
   - University Bachelor’s Qualification (Tot nghiep Dai Hoc)
   - Master’s/Postgraduate Qualification (Tot nghiep Thac Si)
11. What is the total monthly income of your household?
   - < 5 million VND (= £156)
   - 5 million – 10 million VND (£156 - £313)
   - 10 million – 15 million VND (£313 - £469)
   - > 15 million (> £469)
12. What were your scores for the National University Entrance Exam for Maths, English, and Vietnamese Literature?
13. What were your scores on English standardised tests (TOEIC/IELTS/TOEFL) when you applied to university?
14. How many hours do you spend on outside English tutorial classes?
   - None
   - < 1 hour/week
   - 1 – 3 hours/week
   - < 3 hours/week
15. What is your most recent score on English standardised tests (TOEIC/IELTS/TOEFL) (applies to final-year students as a prerequisite for graduation)
16. What are your GPA scores on your subject?
17. Why did you choose your current instructional language for your programme, but not the other one?
18. What do you think are the benefits of your chosen programme for your learning and personal development?
19. What do you think are the drawbacks of your chosen programme for your learning and personal development?
20. In what ways does the chosen instructional language of your programme help or hinder your academic self-efficacy?
21. In what ways does the chosen instructional language of your programme help or hinder your English self-efficacy?

22. In what ways does the chosen instructional language of your programme help or hinder your learning of English language?

23. If you could change one thing in your current programme, what would it be?

Second part: Self-reporting your English and academic self-efficacy beliefs

Please remember we ask you to answer questions only if you feel comfortable doing so, and all responses are kept strictly confidential. You reserve the right to skip any questions that you do not feel comfortable answering.

Please use the following scale to answer the questions appropriately. Please choose the number that indicates your circumstance most accurately.

<table>
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<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
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<tr>
<td>I totally disagree</td>
<td>I somewhat disagree</td>
<td>No opinion</td>
<td>I somewhat agree</td>
<td>I totally agree</td>
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**Question items**

1. I can introduction myself in English

2. I can recognise examples of International Business when I read newspaper.

3. I can develop a business proposal into other markets recognising the nature of companies and the current global business context.

4. I can look up new words by using an English-English dictionary

5. I can give directions from my class to my house in English

6. I can explain core concepts of my course and key topics related to International Business to non-expert audience

7. I can talk about some of the key problems with the international economic system.

8. I can understand English TV programmes produced in Vietnam

9. I can make sentences with English phrases

10. I can understand Business English news on the Internet

11. I can answer my lecturer’s questions in English
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<tr>
<td>12.</td>
<td>I can complete English reading assignments independently</td>
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<td>13.</td>
<td>I can write meaningful business-related emails in English</td>
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<td>14.</td>
<td>I can understand English songs</td>
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<td>15.</td>
<td>I can write piece of English writing exercises assigned by my lecturer</td>
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<td>16.</td>
<td>I can understand academic journals in my course</td>
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<td>17.</td>
<td>I can discuss in English with my classmates about some topics that interest all of us.</td>
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<td>18.</td>
<td>I can understand and apply international dimensions of business management.</td>
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<tr>
<td>Themes</td>
<td>Codes and Definitions</td>
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<tr>
<td>Medium of Instruction on English proficiency (refers to the perceived effectiveness of students' respective instructional medium on their learning and development of English proficiency)</td>
<td><strong>Deductive codes</strong></td>
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<tr>
<td></td>
<td>- Language exposure (opportunities to immerse in an English-speaking environment)</td>
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<td></td>
<td>- Access to English resources (the availability of English-written resources and academic materials related to the course content)</td>
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<td></td>
<td>- Language anxiety (the feeling of unease and nervousness when individuals are required to use English, whether in speaking, listening, reading or writing)</td>
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<td></td>
<td>- Institutional support (the availability of services, resources and assistance from university to help students succeed academically, socially, and personally)</td>
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<td></td>
<td>- Learning strategies (the purposeful techniques, methods or approaches learners employ to enhance their understanding of the subject)</td>
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<tr>
<td>Medium of Instruction on content learning (refers to the perceived effectiveness of students' respective instructional medium on their learning and development of content learning, subject)</td>
<td>- Socio-cultural context (the interaction among socio-cultural, historical and individual factors during students' learning process)</td>
</tr>
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<td></td>
<td>- Prior knowledge and schema (Students' previous experiences, knowledge, and mental frameworks)</td>
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<td></td>
<td>- Zone of Proximal Development (learning support)</td>
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<tr>
<td>comprehensive and academic knowledge</td>
<td>(the level of potential learning, between what students can achieve on their own and what they can do with support from peers and teachers)</td>
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<tr>
<td>- Language scaffolding</td>
<td></td>
</tr>
<tr>
<td>(verbal support and guidance from teachers as students learn new concepts)</td>
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</tbody>
</table>

| Medium of Instruction on self-efficacy |
| students’ respective instructional medium on their learning and development of self-efficacy, i.e how they perceive their own capability to perform a given English or academic task |
| - Performance accomplishments |
| (positive experiences in successfully engaging or performing a given task) |
| - Social modelling |
| (interactions and influence of positive role models such as classmates, teachers within the learning environment) |
| - Verbal persuasion |
| (verbal feedback, encouragement, guidance from external sources) |

| Inductive codes |
| Medium of Instruction cross-over effects on language and content learning |
| Language-content trade-off |
| - (potential negative effects of learning content in a second language on students’ cognitive abilities to grasp knowledge and improve language proficiency simultaneously) |
Appendix 4  Focus group questions

Focus group questions for students in EMI and VMI groups

These questions will also be provided in Vietnamese for participants’ choice of language use. The Vietnamese version of this questionnaire is also attached to the application. (Include questions on self-efficacy beliefs related to content learning)

- Why did you choose your current instructional language for your programme, but not the other one?
- What do you think are the benefits and drawbacks of your chosen programme for your learning and personal development?
- In what ways does the chosen instructional language of your programme help or hinder your academic self-efficacy?
- In what ways does the chosen instructional language of your programme help or hinder your English self-efficacy?
- In what ways does the chosen instructional language of your programme help or hinder your learning of English language?
- If you could change one thing in your current programme, what would it be?

Appendix 5  Data analysis codes in RStudio

```r
# Linear regression model building
master_data$Pred = as.numeric(master_data$Pred)
library(ggplot2)

# Model 1: Predicting English achievement from background variables
m1 = lm(English ~ master_data$AES + master_data$AS + master_data$NH + master_data$HSE + master_data$EXP + master_data$AGE + master_data$SEX + master_data$ETH + master_data$MARRIAGE + master_data$CHILDREN + master_data$CITY + master_data$REGION, data = master_data)

# Model 2: Predicting English achievement from instructional language
m2 = lm(English ~ master_data$INSTRUCTIONAL_LANGUAGE, data = master_data)

# Model 3: Predicting English achievement from instructional language and background variables
m3 = lm(English ~ master_data$INSTRUCTIONAL_LANGUAGE + master_data$AES + master_data$AS + master_data$NH + master_data$HSE + master_data$EXP + master_data$AGE + master_data$SEX + master_data$ETH + master_data$MARRIAGE + master_data$CHILDREN + master_data$CITY + master_data$REGION, data = master_data)
```
```r
#paired t-test
library("dplyr")
# for EMI cohort
# Duolingo 2021 for EMI
EMIYear3 <- c(master_data_trial_EMI$Duolingo_2021)
# Duolingo 2022 for EMI
EMIYear4 <- c(master_data_trial_EMI$Duolingo_2022)
# Create a data frame
EMI_Duolingo_change <- data.frame(
  time_measured = rep(c("EMIYear3", "EMIYear4"),
  english_proficiency_score = c(EMIYear3, EMIYear4))
library("dplyr")
group_by(EMI_Duolingo_change, time_measured) %>%
  summarise(
    count = n(),
    mean = mean(english_proficiency_score, na.rm = TRUE),
    sd = sd(english_proficiency_score, na.rm = TRUE))

# To calculate the change of MOI effects on each instructional stream
# Create new columns that reflect change of effects
library("dplyr")
view(master_data)
# Change of MOI effect on Duolingo
master_data$Duolingo_change <- master_data$Duolingo_2022 - master_data$Duolingo_2021
# Change of MOI effect on GPA
master_data$GPA_change3 <- master_data$GPA_year4 - master_data$GPA_year3
master_data$GPA_change3Z <- master_data$GPA_year3 - master_data$GPA_year2
master_data$GPA_change21 <- master_data$GPA_year2 - master_data$GPA_year1
master_data$GPA_change41 <- master_data$GPA_year4 - master_data$GPA_year1
# Change of MOI effect on self-concept
master_data$BusCon_Index_change <- master_data$BusCon_Index2 - master_data$BusCon_Index1
master_data$GenEng_Index_change <- master_data$GenEng_Index2 - master_data$GenEng_Index1
master_data$BusEng_Index_change <- master_data$BusEng_Index2 - master_data$BusEng_Index1
# Linear regression and model building
master_data$Prog <- as.numeric(master_data$Prog)
install.packages("stargazer")
library(stargazer)

# Interaction term analysis of change effects
# Interaction term between MOI and other predictors on Business - Phase 1
m1 <- lm(Duolingo_change ~ Prog + Gender + Prog*Gender, data=master_data_trial)
m2 <- lm(Duolingo_change ~ Prog + Household_income + Prog*Household_income, data=master_data_trial)
m3 <- lm(Duolingo_change ~ Prog + Eng_hours + Prog*Eng_hours, data=master_data_trial)
m4 <- lm(Duolingo_change ~ Prog + enr_grade + Prog*enr_grade, data=master_data_trial)
stargazer(m1, m2, m3, m4, type="html",
  dep.var.labels=c("Interaction Term Analysis of MOI and predictors on change in English proficiency score between year 3 and year 4"),
  covariate.labels=c("Interaction of MOI and gender", "Interaction of MOI and gender", "Household income (H1)", "Interaction of MOI and H1", "Private English tuition (PE)", "Interaction of MOI and PE", "Entry English score (EE)", "Interaction of MOI and EE"), out="InteractionEMI_Duolingo34.htm",
  report = c("html"))
```
Appendix 6  Qualitative analysis in NVivo
Appendix 7  Human Research Ethics Committee Consent Form

Human Research Ethics Committee

Consent form for semi-structured interviews

Informed Consent for ‘Examining implications of English versus Vietnamese Medium Instruction programmes on students’ English self-efficacy and proficiency’

Nguyen Thi Mai An, Postgraduate Research Student, Faculty of Wellbeing, Education and Language Studies, the Open University.

Please tick the appropriate boxes

1. I agree to participate in the semi-structured interviews carried out by Nguyen Thi Mai An of the Open University, to aid with the research of Examining implications of English versus Vietnamese Medium Instruction programmes on students’ English self-efficacy and proficiency
   □ ☐
2. I have read the information sheet related to the research project and understand the aims of the project
   □ ☐
3. I understand that there is a possibility that the researcher will recognise my identity and vice versa during my participation in the interview
   □ ☐
4. I agree to have the interviews recorded (video or Dictaphone), so it can be transcribed after the focus group is held.
   □ ☐
5. I am aware of the questions to be asked in the interview
   □ ☐
6. I am fully aware that I will remain anonymous throughout data reported and that I have the right to leave the interview at any point by clicking the ‘leave’ button on Teams.
   □ ☐
7. I am fully aware that data collected will be stored securely, and safely in accordance with Data Collection Act (1998)
   □ ☐
8. I am fully aware that I am not obliged to answer any question, but that I do so at my own free will.
   □ ☐
9. I am aware that I can make any reasonable changes to this consent form
   □ ☐

Signatures

I have witnessed the accurate reading of the consent form with the potential participant and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

__________________________________________
Name of participant [IN CAPITALS]  Signature  Date

For participants unable to sign their name, mark the box instead of signing  ☐
Appendix 8  Information Sheet

Human Research Ethics Committee

Research study participant information sheet

Study title

*Examining implications of English versus Vietnamese Medium Instruction programmes on students’ English self-efficacy and proficiency*

Start and end dates: 1 October 2020 – 30 September 2024

Who is conducting the research?

My name is Nguyen Thi Mai An and I am inviting you to take part in my doctoral research project titled: *Examining implications of English versus Vietnamese Medium Instruction programmes on students’ English self-efficacy and proficiency.* I am currently a full-time postgraduate research student at Faculty of Wellbeing, Education and Language Studies, the Open University. My email address is an.nguyen@open.ac.uk and my phone number is +44 7821 405 298. This research will form my doctoral thesis for my PhD programme at the Open University.

The research aims to compare the different implications of English versus Vietnamese Medium Instruction education on students’ English self-efficacy beliefs and English proficiency at higher education institutions in Vietnam.

I very much hope that you would like to take part. This information sheet aims to answer any questions you might have about the project, but please don’t hesitate to contact me at an.nguyen@open.ac.uk if there is anything else you would like to know. Alternatively, you can get in touch with Dr Prithvi Shrestha, an independent contact, at prithvi.shrestha@open.ac.uk if you have any concerns about this research.

Invitation

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being
done and what it will involve. Please take time to read the following information carefully.

This study will recruit participants who are Vietnamese undergraduate students, who are in their third and final year of studies at Foreign Trade University, Hochiminh City Campus. The selected participants are over 18 years old, and currently enrolled in either English or Vietnamese Medium route for the International Business Economics programme at this university. You are invited to take part in this research because you meet the above criteria. It is important to note that choosing to either take part or not take part in this study will have no impact on your marks, assessments or future studies and will not be shared with any of your tutors. You are invited to give reflections on your English self-efficacy beliefs, to take part in a 15-minute online English Test called Duolingo Test, and to discuss your experiences about your respective medium of instruction programme at university in a semi-structured interview with myself, the main researcher.

In terms of participant recruitment, I will first send out the invitation to participate via multiple channels including emails, social media (mainly Facebook, and LinkedIn). The estimated recruitment number is around 20-30 participants.

**General information about the research study and collected research data**

I am the research student of this research, and my research is funded by the Open University for a period of three years from 1 October 2020 to 30 September 2023. My supervisors for this project are Dr. Prithvi Shrestha (prithvi.shrestha@open.ac.uk), Prof. Kristina Hultgren (kristina.hultgren@open.ac.uk) and Dr. Sarah Mukherjee (sarah.mukherjee@open.ac.uk).

This research has three main aims: first, to understand whether or not undertaking education through English or Vietnamese language affects students levels of self-efficacy beliefs in their English proficiency; second, to provide a comparative study on Vietnamese versus English Medium Instruction for its implications on students’ English proficiency; and third, to investigate whether or not there exists a gap between students’ English self-efficacy beliefs and their actual proficiency levels in both modes of the medium of instruction.
This research proposes to employ three types of data collection methods: questionnaires, experimental elicitation tasks (participants’ scores from an online sample English Test, Duolingo Test), and semi-structured interviews. This research starts from 1 October 2020 to 30 September 2024. The earliest date I will contact you is from 1st April 2021. The data collection procedures of this research will strictly follow guidelines from Covid-19 Health and Safety Risk Assessment Guidelines by the Human Research Ethics Committee, the Open University, and the ethical guidelines for educational research from British Educational Research Association (BERA 2011).

What will I be asked to do if I agree to take part?
It is up to you to decide whether or not to take part. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time during the data collection process and without giving a reason. In case you change your mind and would like to withdraw your data from my research after the data collection process is completed, you will have reserve the right to do so by September 2022 when the data aggregation process starts.

Participants’ responsibilities include:

1. **Completing an online questionnaire on background information and English self-efficacy beliefs:**

After agreeing to participate in the research, you will be asked to fill in your answers for an online questionnaire. The first section of the questionnaire will ask about your demographic information in terms of gender, location of hometown, age, years of English learning, hours of English learning lessons outside formal schooling, your parents’ profession and educational background, your English proficiency scores (as all participants are required to take a standardised Test of English for International Communication, TOEIC test as a requirement for graduation), your academic achievement (your average final scores for the last three years of studies), your expected salary, and your career aspirations (public/ private sector, global/ local employment). In addition to close-ended questions, there will also be open-ended questions that ask you to elaborate on your learning experiences and your perceptions of your respective study programme. The second part of the questionnaire includes a questionnaire to measure students’ English self-efficacy beliefs. The questionnaire will take you around 10-15 minutes to complete.
Throughout the questionnaire, you reserve the right to refuse to answer any question and still complete the survey. The questionnaire will be written in both Vietnamese and English, and will be administered through Qualtrics, an approved platform that is compliant with OU’s Data Protection regulations.

2. Taking part in an online English Test, Duolingo Test

After you have completed the online questionnaire, I will then send you an invitation to take part in Duolingo English Test. In case you do not wish to take the test, you will be respectfully excluded from the rest of the researcher. In case you wish to take part, I will send you an URL link to the website of English Duolingo Test. The test is administered online with a total duration of 15 minutes. You will be required to have a computer with microphone, speakers, a front-facing camera with a secure internet connection. You are advised to take the test in a quiet, well-lit room on your own. Once the test is completed, you can send a screenshot of your test scores to me via my institutional email at an.nguyen@open.ac.uk.

3. Taking part in semi-structured interviews

The interview will last for about 30 minutes and will take place via Microsoft Teams, a free, open-access video-conferencing website that is compliant with OU’s Data Protection Regulations. You will be asked for consent to record the video call beforehand and you will have the option to turn off their camera during the video call if you wish to do so. You will be asked to elaborate about their experiences and perceptions about your respective programme (either EMI or VMI).

The benefits in taking part in this research include:

- An opportunity to reflect upon your English self-efficacy beliefs and your experiences from your respective medium of instruction programme
- An opportunity to test your English proficiency with Duolingo Test, for which you can obtain a test score and use it for your own purpose.
- An opportunity to learn about the different implications of English versus Vietnamese Medium Instruction programme on students’ English proficiency and self-efficacy beliefs in Vietnam after the research is finished.

Will anyone know I have been involved?

Your personal identity (name, date of birth, high school name, qualifications achieved) will be kept confidential throughout and after the research process finishes.

Could there be problems for me if I take part?
While I will ask you to share some personal data, such as your English test scores, all personal data will be held securely and will be anonymised as soon as possible (provide data) to preserve your anonymity. Furthermore I will also ensure to keep the data collection session in a timely manner so that the research will not cause major disturbance to your personal life.

**How will the data I provide be used?**

This research upholds the principles of confidentiality and anonymity of participants’ data. Therefore, this research will take precautionary measures such as employing ‘fictionalising’ approaches, and changing identifying features to avoid identification of participants’ identities. This research also complies with the legal requirements in relation to the storage and use of personal data as stipulated in the UK by the Data Protection Act (1998) (Act 1998), the Freedom of Information Act (2000) (Lee 2005), the General Data Protection Regulation (2018) (Regulation 2018), and the Open University Research Data Management Policy. Your personal information including your signed consent form and your email address registered via questionnaire will be anonymised and disaggregated so that they can be securely stored on a password encrypted digital device accessible to only the researcher, who is based in the UK, and her supervisory team including Dr Prithvi Shrestha and Dr Kristina Hultgren only, for up to 6 months after the research finishes.

The data that you provide will be used to write presentations at academic conferences, publications including a full doctoral dissertation thesis, peer review journals, and local educational newsletters in Vietnam, and use of electronic media such as personal website and social media such as Twitter to reach out to multiple audiences.

**Your right to withdraw from the study**

- You have the right to withdraw from the study at any time during your participation by choosing the box ‘I do not wish to answer this question’ in the questionnaire, by clicking ‘quit the test’ button at any time throughout the Duolingo Test, and by clicking ‘leave’ in the interview session. I will totally respect your decision to withdraw without further asking the reasons why you might wish to do so.
- In case you decide not to sign up to all three data collection phases, or if you decide to opt out of the interview, the data you give for the questionnaire and
the Test will still be used for data analysis process unless you ask for all of your data to be removed.

- You have the right to ask for your data to be removed after your participation in the study by directly contacting me via my institutional email at an.nguyen@open.ac.uk up until the time all data have been aggregated for analysis by September 2022.

**How do I agree to take part?**

Participants will be first reached out with information about the aims of the study, data to be collected, will be embedded in the survey. The participant will have to read and tick a box to say they have read, understood and agree to consent before they are able to progress to the next part of the questionnaire. After that, the researcher will follow up with participants via their registered emails to schedule the English Test and the semi-structured interviews. At their agreed date and time, the researcher will send them a link to take the online English Test and after that, an invitation link to join the focus group discussion on Microsoft Teams.

**Data Protection**

The Open University is the Data Controller for the personal data that you provide. The lawful reason for processing your data will be that conducting academic research is part of the Open University’s public task. The consent we request from you relates to ethical considerations. If any use will be made of the personal data in addition to analysis of the research, then the appropriate lawful basis needs to be considered. If any marketing communications will arise, this is likely to require consent.

You have a number of rights as a data subject:

- To request a copy of the personal data we have about you
- To rectify any personal data which is inaccurate or incomplete
- To restrict the processing of your data
- To receive a copy of your data in an easily transferrable format (if relevant)
- To erase your data
- To object to us processing your data

If you are concerned about the way we have processed your personal information, you can contact the Information Commissioner’s Office (ICO). Please visit the ICO’s website for further details.
Thank you very much for taking time to read the information sheet.