

**English at the Crossroads: A Case Study of Standard and Southern
English in STEM Classrooms of a Bangladeshi English-Medium
School**



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Spring 2025

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Classrooms of a Bangladeshi English-Medium School**

A Thesis Submitted to
The Department of English and Humanities
University of Liberal Arts, Bangladesh

In Partial Fulfillment
of the Requirements for the Degree of
BA in English

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Spring 2025

CERTIFICATE OF APPROVAL

I hereby declare that this thesis is the student's own work and effort. All sources of information incorporated here have been duly acknowledged. This thesis has been submitted with my approval.



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DECLARATION

This thesis is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions.

A handwritten signature in black ink, reading "Marifa". The signature is written in a cursive style with a horizontal line underneath the name.

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Acknowledgements

A thesis is never written alone. Behind these pages are countless moments of self-doubt and small victories—and, above all, the people who stood by me through them.

My deepest gratitude goes to my Ammu. Never once has her belief in me wavered, and that has pushed me to overcome the toughest of storms. I will forever be indebted to her boundless sacrifices and love.

To the teachers who mentored me—especially those no longer here to witness the result—your lessons have and will continue to carry me through life.

And this journey would not have been half as meaningful without the incredible friends I’ve had along the way. Because of them, I never once felt alone these past four years.

Above all, I owe the biggest thanks to my teacher and supervisor, Nahiyan Sir, whose guidance, patience, and care with this thesis made every ambition feel within reach.

This work exists because of you all.

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Abstract

In postcolonial Bangladesh, English-medium education (EME) is deeply intertwined with colonially rooted language ideologies, wherein Standard English is upheld as the exemplary form. This institutional hegemony sustains the social valorisation of native English varieties in classroom discourse while marginalising the authentic, hybrid, and locally relevant ways English is used in the Global South—known as Southern English. While the dominance of Standard English in EME has been well-documented, there is a need to research how Southern-rooted linguistic features and knowledge systems operate in the classroom discourse of English-medium (EM) school teachers—particularly in STEM education, where language ideologies are often rendered as neutral. This study brings to light the reality of Southern English in the pedagogical realm in contrast to the institutionalised norms of Standard English in teacher discourse, aiming to dissect the ideological dynamics at play in EM classrooms. A qualitative case study was conducted in a mid-tier EM school in Bangladesh, using Critical Classroom Discourse Analysis (CCDA) through classroom observations guided by a checklist. The findings revealed a dichotomy in teachers' discursive practices, where two of the four teachers adhered to Standard English norms, while the rest integrated Southern English features as a form of resistance—all of which positioned the STEM classroom as a site of ideological tensions. The study contributes to literature on World Englishes, language policy, and postcolonial education, and advocates for rethinking of the EME framework by policymakers, institutions, and educators to better incorporate local languages and knowledge systems.

Keywords: English-medium education, STEM classroom, language ideology, Standard English, Southern English, teacher discourse, Critical Classroom Discourse Analysis

Chapter 1: Introduction

The prevalence of English in Bangladesh does not just open doors to opportunities—it gets to decide which doors are kept shut and who holds the key. Nowhere is this more evident than in English-medium (EM) schools, where the promise for socioeconomic advancement is interwoven with colonial ideas of what constitutes “good” or “proper” English. Beneath the polished curricula lies a deeper struggle over language, identity, and whose knowledge is allowed to matter. This study explores how language, power, and education intersect in postcolonial Bangladesh, with a focus on EM schools and their role in perpetuating colonially-rooted language ideologies. It examines how Standard English continues to dominate educational discourse and marginalise local languages and knowledge systems. Through a critical analysis of STEM teacher discourse in a mid-tier EM school in Bangladesh, this research presents how classroom discourse reflects or challenges the dominant ideologies of Standard English. It brings local knowledge and linguistic realities to the forefront, revealing the tensions between language policy and classroom realities in a globalised, postcolonial context, and framing the relevance of Southern English as a conceptual lens in unpacking these dynamics.

1.1 Background

The English language holds undeniable power in today’s globalised and neoliberal world, dominating the fields of business, science, technology—and unsurprisingly, education (Hüppauf, 2004; Taguchi, 2014). In non-native English-speaking countries, English Medium Instruction (EMI) is often seen as a sure-fire path toward socioeconomic mobility and success (Rahman et al., 2021). However, the adoption of EMI in multilingual, postcolonial contexts such as Bangladesh is layered with historical, social, and ideological complexities that can be traced back to colonial rule (Rahman et al., 2019).

English-medium education (EME) was first institutionalised in South Asia during British rule through Macaulay's Minute on Indian Education in 1835 (Mousumi & Kusakabe, 2021). The aim was to create a class of English-educated locals who would serve low-level administrative positions and still remain subservient to colonial interests. These individuals were to be, in Macaulay's words, "Indian in blood and colour, but English in tastes, in opinions, in morals and in intellect" (Sharp, 1920, p. 116). Due to the exclusive nature of EME, it became associated with prestige and opportunities, only largely available to the urban elite who could afford it (Hamid, 2009). Thus, the groundwork was laid for an education system that rewarded proximity to the language of the colonisers, as even limited command of English was key to acquiring jobs in lower-level government positions and European-run businesses (Evans, 2002).

After the British rule and the Partition in 1947, English continued to serve as a link language between East and West Pakistan (Hamid, 2009; Hashem, 2010). However, socio-political reformatations influenced by the Muslim identity and the tensions between national identity and the Bengali language pushed the English language back into the educational domain of East Pakistan (Banu & Sussex, 2001). Following Bangladesh's independence in 1971, the emerging government strongly emphasised Bangla as a part of the nationalist project. English was demotivated by its status and Bangla as the medium of instruction was pushed into public education (Hamid & Erling, 2016). These efforts culminated in policies such as the Bangla Language Act of 1987, which reinforced Bangla's dominance in official and public life.

At the same time, EME, particularly EM schools, continued to thrive as they were privately run and outside the national curriculum and language policy framework (Mousumi & Kusakabe, 2021). In this regard, international organisations like the British Council ensured the proliferation of EME alongside the national education system through their continued promotion of English in

standardised testing (e.g., O- and A-Level examinations), teacher training, and curriculum development (British Council, n.d.). This was partly because the social elite could not see Bangla-medium education as an option for their children (Banu & Sussex, 2001). Alongside that came the rise of globalisation which brought along with it the dominance of the English language and its association with upward mobility and cosmopolitan identity (Imam, 2005). In an ironic sense, it could be said that the nationalist push toward Bangla caused a shift towards EM schools (Hamid & Erling, 2016), which now are more than just educational institutions; they have become markers of socioeconomic success (Mousumi & Kusakabe, 2017).

Currently, there are over 28,000 students enrolled in approximately 123 EM schools in Bangladesh (BANBEIS, 2023). These schools range from elite international institutions to more affordable, low-fee private schools aimed at the aspiring middle class (Sah, 2020). Despite its efforts for social inclusivity, the very essence of EM schools is to associate themselves with dominant language ideologies such as that of Standard English (Jahan & Hamid, 2019). This is largely due to the monolingual, English-only policies and practices enacted in these schools, which prioritise Western-coded language, culture, and realities over local ones. It reaffirms the colonial logic of viewing Standard British or American varieties as the legitimate form of expression while localised uses of English are deemed as incorrect or inferior (Imam, 2005). As Pennycook (2000) argues, the standardisation of a language is never neutral, it is a product of power rooted in historical processes that prioritise certain forms of language over others. Therefore, in the case of Bangladesh, the ideological preference for Standard English is closely tied to colonial legacies and global hierarchies of linguistic value. British and American English are not only seen as correct but as necessary for success. The belief that Standard English is correct comes hand-in-hand with believing that other varieties of English are inferior and of less importance (Metz, 2018). Hence,

the standardisation of British and American English in EM schools are language ideologies that are inherently colonial in nature.

Therefore, classroom discourse plays an imperative role in manifesting language ideologies as the classroom does not exist as an isolated entity but as a part of the bigger society (Kumaravadivelu, 1999; Jenks, 2020). Moreover, within classroom discourse, the pedagogical choices made by teachers are crucial in promoting dominant language ideologies (Tollefson & Yamagami, 2012; Metz, 2018). Classrooms are not isolated spaces, they are connected to the broader society, which is why their discourse plays an imperative role in maintaining language ideologies (Kumaravadivelu, 1999; Jenks, 2020). Non-native teachers, in particular, often internalise and reproduce dominant language ideologies while simultaneously negotiating their own linguistic identities in the classroom (Braine, 2010). As a result, teachers' classroom discourse becomes a crucial sight where these ideologies are both reinforced and contested. Additionally, the process of language standardisation implies that a language should never go through change (Milroy, 2006). This does not take into account the creation of localised varieties of English in non-native English-speaking countries. It is impossible for a language to not be impacted by the community it is used in as it denies the social reality of languages in different contexts (Cummins, 1979; Hamid, 2023). In the EME context, there is a discrepancy between the language use that is prescribed as the policy and what actually occurs in the language and non-language classrooms (Ali & Hamid, 2018; Rahman & Singh, 2021).

Emerging from this reality, Southern English is an epistemologically rooted variety of English shaped by the localised, culturally relevant ways the language is used in Global South contexts like Bangladesh. It has a laser focus on Southern epistemologies and knowledge systems, and how English is manipulated to meet the linguistic and communicative needs of contexts where

it is not the first language (Hamid, 2023). Hence, it reveals the sociolinguistic reality of language use in Global South contexts, which is utterly dismissed by the paradigm of Inner-Circle/Standard English (Kachru, 1994).

1.2 Problem Statement

Lippi-Green (1997) defines the social domain of Standard English to be the “language of the educated” (p. 56), i.e., the language spoken by the upper classes of society and imposed on the general population and maintained by dominant institutions, leading to beliefs that having a uniform standard language facilitates communication. This is an abstract and unrealistic idealisation as no language is unaffected by the community that uses it (Lippi-Green, 1997; Hamid, 2023). However, this very notion of a standard language and its attendant uniformity entails superiority over other varieties (Metz, 2018). Within the domain of English education in non-native contexts, EM schools perpetuate a similar monolithic view of English through the promotion of Standard English, which upholds native varieties of English as superior and in the process downplays local varieties that have emerged. Moreover, in a postcolonial context, it entails valorising native speaker norms while marginalising the localised varieties of English that exist in reality; a reflection of colonial linguistic hierarchies. However, native varieties of English do not encapsulate the complex linguistic realities of multilingual and postcolonial countries in the Global South (Hamid, 2023). There remains a discrepancy between what the learner knows through their lived experiences and what is interpreted through the native speaker of the L2, leading to assumptions that once seemed certain to be questioned and challenged (Kramersch, 1993).

The ideology of Standard English shaping teachers’ classroom discourse leads to the creation of a colonial and monolingual microcosm within EME wherein the local knowledge system, language, culture, values are marginalised (Cameron, 1995; Sultana, 2012). This

marginalisation is more than just linguistic as it reasserts Western norms over local knowledge systems, branding them as inferior or secondary, playing into colonial interests. Hence, the discourse choices made by teachers in classroom discourse have broader socio-political implications. The identification of Southern English features then opens up the potential to challenge and resist the Standard English ideologies enforced in and associated with EM schools and opens up eyes to the sociolinguistic reality that this hegemonic view of English only lends to colonial legacies and denies the multilingual identity of non-native speakers.

While existing literature has examined teacher discourse in STEM classrooms (Hanrahan, 2005; Kucukaydin, 2019), and how dominant language ideologies like Standard English shape classroom discourse (Metz, 2018), there remains a knowledge gap regarding how these issues are understood in non-native STEM classrooms at the schooling level (Sah, 2022). Although studies on EMI in the Global South contexts reveal tensions between language policy and practice, few address how these tensions manifest in classroom discourse through the lens of Southern English (Hamid, 2023). Moreover, a majority of applications of Critical Classroom Discourse Analysis (CCDA) (Kumaravadivelu, 1999) have been on higher education, with limited literature on secondary schooling spaces, which is where students actively form linguistic identities (Ryan & Johnson, 2009). To address these knowledge gaps, this study examined STEM teacher discourse at the secondary level in a mid-tier EM school in Dhaka, Bangladesh using the CCDA framework.

1.3 Research Objectives

This study aims to:

- examine EM school teachers' linguistic choices regarding Standard English use in STEM classrooms

- identify the features of Southern English in EM schools teachers' classroom discourse in STEM classrooms
- explore broader ideological implications of the English varieties used by EM school teachers in STEM classrooms

1.4 Research Questions

To guide this study, the following research questions have been created to explore how STEM teacher discourse in EM classrooms both reflects and resists dominant language ideologies through the lens of Southern English:

1. What linguistic choices do English-medium (EM) school teachers make in STEM classrooms regarding Standard English?
2. What features of Southern English are present in EM school teachers' STEM classroom discourse?
3. What are the broader ideological implications of the English varieties used by EM school teachers in STEM classrooms?

1.5 Significance of the Study

This study offers important insights into how the English language functions as more than just a tool for instruction. It is a marker of legitimacy, identity and power in classrooms, and in the context of EM education, it holds significance for key stakeholders, namely policymakers, school administrators, and teachers. For policymakers, the findings raise important questions about the assumptions built into EMI policies. While Standard English continues to be positioned as the norm, this study shows that other forms, particularly Southern English, are already a natural part of classroom life. Policies need to be put in place that move beyond a one-size-fits-all model of English pedagogy and value the diversified ways students and teachers use the language. When it

comes to school administrators, the study highlights the need for developing school cultures where local variation in English use is acknowledged and valued, instead of the strict policing of the “correct” English. If administrators are able to set the tone for their institutions, it allows teachers to be able to build an inclusive learning environment with no fear of authoritative backlash. Finally, for teachers, the study encourages deeper reflections on how everyday language choices in the classroom impact the presence of dominant language ideologies which are divisive in nature, even in non-language classrooms. Teachers are not just neutral transmitters of knowledge; their discourse actively shapes the critical dynamics of a classroom. Hence, being aware of this and validating multiple Englishes in the classroom contribute to an inclusive, just, and affirming classroom environment and learning experience.

1.6 Limitations of the Study

This study is focused on a single mid-tier EM school, which means the findings may not fully represent what is happening in other EM schools in Bangladesh, particularly the elite and low-cost schools where resources and training vary significantly. Another limitation is that the study centers entirely on teacher discourse, while this provides a rich insight into language ideologies in the classroom, it leaves out the student perspective, which is equally as important in this regard. Additionally, observations took place over a limited period of time and with a small number of teachers, capturing only a moment in time rather than how practices might evolve or shift. Finally, only the oral discourse practices have been observed in this study, written classroom materials, assessment styles, or institutional policies would offer valuable layers of understanding. Together, these limitations point to the need for broader, multi-perspective studies in the future.

Chapter 2: Literature Review

This chapter reviews relevant literature to position this research in the broader discussions of English varieties, language ideologies, language policy, and classroom discourse in a postcolonial setting. It explores the development of World Englishes in the context of the Global South and colonially-rooted Standard English ideologies in the postcolonial education system. Focusing on EM schools in Bangladesh, it highlights how language beliefs and practices contribute to problematic pedagogical norms. It concludes by discussing Critical Classroom Discourse Analysis (CCDA) as a methodological tool to analyse how such ideologies are enacted in the classroom.

2.1 World Englishes

During the British colonial era, the English language was enforced upon colonised societies in every influential aspect, including education. As Halliday et al. (1964) explain, the variety of English that was promoted was the one being used in a professional capacity in England, thereby reinforcing English ownership over the language. However, in the era of decolonisation, a shift has occurred with the emergence of different varieties of English specific to the respective postcolonial region, leading to the recognition and subsequent discussion of different Englishes in Asia, Africa, and the Caribbean, and giving rise to what is now termed *World Englishes* (Schneider, 2003).

The conversation around World Englishes was pioneered by Kachru (1985) with his model of three concentric circles: the Inner Circle, Outer Circle and Expanding Circle. The Inner Circle comprises countries where English is a first language (the UK, the USA, Canada, Australia, and New Zealand); the Outer Circle includes countries where English occupies a second language status; and the Expanding-Circle countries treat English as a foreign language. This model

challenged the unquestioned authority of American and British English through pluralising English and legitimising varieties emerging from postcolonial societies were looked down upon (Bruthiaux, 2003). Kachru (1992) highlights how this unchecked power has been exacerbated by the economic dominance of the Inner-Circle countries, and these nations use this very power to maintain linguistic control, particularly through their dismissive attitude towards linguistic innovation in Outer-Circle Englishes. Postcolonial countries belong to the Outer Circle where English has a contentious colonial history. Bolton (2006) highlights how Englishes emerging from these contexts are traditionally seen as not occupying the same space as their native counterparts. Mufwene (2001) echoes this sentiment, adding how Outer-Circle Englishes are seen as the “illegitimate offspring” while their native counterparts are seen as the “legitimate” kind (p. 107). The paradigm of world Englishes seeks to dismantle these hierarchies and challenge Inner-Circle dominance over linguistic norms (Bolton, 2006).

Based on this paradigm, Hamid (2023) has conceptualised Southern English, which acknowledges that native-speaker norms and their rules do not fully encompass the sociolinguistic reality of the South. Southern English encompasses “creative and meaningful ways of using English regardless of its formal properties, highlighting the plurality, multiplicity, and localness of English in a globalised world” (p. 411) in an attempt to validate the existence and use of non-standard Englishes alongside their native counterpart. Hamid (2023) uses Bangladesh as a case study for the Global South, validating the use of Southern English in different domains which subvert the Inner-Circle norms and construct their own English in order to meet communicative needs. This concept of Southern English encompasses particular characteristics: i) use of culturally relevant terms, expressions and examples that reflect social and cultural experiences unique to the local context, ii) blending of English with Bangla in both formal and informal contexts i.e. code-

mixing and code-switching, iii) sentence structures influenced by Bangla syntax, such as variations in word order, and iv) pronunciation features influenced by local phonological systems, such as variation in stress, intonation, and vowel sound. While Southern English has been explored on a communicative basis by Hamid (2023), this research attempts to acknowledge its potential beyond this in a pedagogical capacity.

2.2 Language Management, Beliefs and Practices in Postcolonial Societies

Spolsky (2004) identified three components of language policies: practices, beliefs, and management, which are all connected to one another. Language practices are behaviours and choices made by people that can be observed, language beliefs entail which varieties and features are valued, and language management constitutes a clear attempt by an authoritative person or group to dictate people's practices and beliefs. In a postcolonial South Asian context, the introduction of Macaulay's Minute on Indian Education in 1835 (Mousumi & Kusakabe, 2021) is a form of language management as it constitutes "a requirement to use a specific language as medium of instruction" (Spolsky, 2007, p. 4). This act of language management aligned with British colonial interests to reshape the cultural and intellectual outlook of the locals and set the stage to alter local practices and beliefs regarding the English language in the coming decades.

Language beliefs, as defined by Spolsky (2004), constitute the degree of value ascribed to certain varieties and features of a language. The implementation of English in colonial education systems ensured the rapid spread of the language in the postcolonial era (Bolton, 2006). That, along with the economic power wielded by the USA in the 1960s, skyrocketed the value ascribed to the English language in the education system (Bolton, 2006). Hence, the beliefs associated with the language also shifted towards idealising an Inner-Circle centric view of English, leading to the ideology of Standard English.

The standardisation of a language is never a neutral process or happenstance, it is deliberate and controlled by historical and social factors (Pennycook, 2000). The ideology of a standard language refers to “a complex set of usually unconscious and unarticulated assumptions about the nature, status, and social value of different language varieties” (Tollefson & Yamagami, 2012, p. 1). Hence, what variety gets ascribed the label of being the standard is dependent on the values (re: beliefs) associated with that specific variety. Milroy (2001) identifies the role of prestige in the standardisation of languages like English, where the prestige designated to a variety of English is influenced by social factors concerning the speakers. Hence, the Englishes in the Inner Circle, specifically British and American English, are seen as Standard English due to the value ascribed to them since the imposition of colonial language management.

The way English has been implemented and taught globally in schools and universities throughout the 20th century has given way to the standard language ideology of a singular Standard English (i.e., British and American English) driven by traditional and deconstructed views toward the history of English (Bolton, 2006). Metz (2018) highlights how teachers’ discourse is very much influenced by dominant language ideologies through examining how high school English teachers navigate the challenge of promoting a critical understanding of language variation while addressing dominant language ideologies such as Standard English in linguistically diverse classrooms in the U.S. Most teachers ended up inadvertently reinforcing Standard English ideologies which shows that even if teachers do not intend to, dominant language ideologies remain a ubiquitous presence in their classroom discourse. In Bangladesh, language beliefs related to Standard English are prevalent in the realm of EM education. Jahan and Hamid (2019) analyse letters to editors and online posts by students in both English and Bangla medium streams of education to present how EM educated identities are constructed around elitism, and how this

identity construction reflects tensions between the two mediums of instruction. The paper highlights how EM students ideologically associated themselves with Standard English and how it was reflected in their discourse. This association with Standard English then reveals reproductions of colonial structures based on class divisions. Imam (2005) also highlights how EM schools reproduce Anglo-American hegemony through their promotion of Standard English being British and American English.

However, language beliefs and language practices do not always go hand in hand. What is expected or desired in the classroom may not always be what is actually practiced. Ali and Hamid (2020) shed light on this reality through their investigation on why English language teaching in Bangladeshi secondary schools is negatively influenced by testing. One of their findings highlights the discrepancy between what is expected through the curriculum and what is actually carried out in the classroom. In the context of EMI, English may be the primary language of instruction, but language variation is inevitable. Ali and Hamid (2018) highlight how teachers often code-switched between English and Bahasa Malaysia when teaching in a Malaysian university despite the EMI policies in place as English-only lectures hindered meaning making for students. This shows that the monolingual-rooted belief of EMI is not only problematic but also unrealistic. Furthermore, Rahman and Singh (2021) also show that the use of the first language in classroom discourse is not only inevitable but also advantageous when promoting learning. Their paper emphasises the natural use of both Bangla and English in private EMI universities in Bangladesh, labelling the bilingual practice in these classrooms as an “open-secret practice” (p. 10). The focus is uniquely on STEM classrooms, wherein classroom discourse involves specific academic language registers that are often perceived as linguistically neutral (Gee, 2004). However, as their paper points out, language variation or the translingual use of English and Bangla do not escape STEM subjects in

EMI. These studies reveal a pattern of discrepancy between expectations and sociolinguistic realities in EMI, pointing to the utility of Southern English in acknowledging such variation.

2.3 The Context of English Medium Schools in Bangladesh

The responsibility of dictating these language practices then becomes an important consideration. In Bangladesh, EMI at the school level is implemented in two streams: English-version and English-medium (EM). The English-version schools follow the National Curriculum but the medium of instruction is English (Mousumi & Kusakabe, 2021). Due to global demand, policies in Bangladesh have seen a shift from a Bangla-centric educational system post-independence to one that mandates English language instruction from primary through tertiary levels, including the adoption of English as the medium of instruction (Rahman & Pandian, 2018). This is supported by the National Education Policy of 2000, where English as a medium of instruction was set in the kindergarten level, and allowed to be present in the secondary level alongside Bangla medium instruction (Ministry of Education, 2000), and the National Education Policy of 2010 which emphasised fostering English writing and speaking skills from the very beginning of primary education (Ministry of Education, 2010).

On the other hand, EM schools are privately operated and fall outside the national curriculum framework (Ministry of Education, 2000). As a result, they are not subjected to centralised language policies. Hamid and Erling (2016) critically analyse English education policy and planning in Bangladesh, highlighting the clear distinction between private and public sectors in education and the impact this has on English education since private sector institutions have the liberty to decide their language policies without having to consider governmental restrictions. Mousumi and Kusakabe (2021) also emphasise the lack of centralised language policies in EM schools in their critical review of the school education structure in Bangladesh, leading to the

implementation of language policies that do not have to be governed by national policy guidelines. This monolingual culture and lack of explicit policy has given the space for problematic and outdated language beliefs such as that of colonial language ideologies to persist in EM schools (Jahan & Hamid, 2019).

2.4 Theoretical Framework of the Study

This section outlines the theoretical foundation of the study. As the research aims to examine the ideological implications of teacher discourse in STEM classrooms of EM schools, it draws on CCDA, which is informed by poststructuralist and postcolonial theories. CCDA offers a critical lens to analyse the ways language use in classroom settings reflects broader ideological and sociopolitical influences. As per the study's objectives, this framework allows for the discourse analysis of micro-level interactions i.e. linguistic choices made in the classroom and the use of Southern English in this regard, and moving towards macro-level ideological critique i.e. the broader ideological implications of teacher discourse in the classroom in relation to poststructuralist and postcolonial theories.

2.4.1 Critical Classroom Discourse Analysis

Critical Discourse Analysis (CDA) emerged as a crucial framework in European discourse studies in the 1980s, with contributions from scholars Norman Fairclough, Ruth Wodak, Teun van Dijk, and others (Blommaert & Bulcaen, 2000). It has been used in research in multiple areas, including to analyse teacher discourse in secondary science classrooms. Hanrahan (2005) investigates teacher discourse in secondary science classrooms to understand why some students might feel disengaged in these settings. The findings suggest that teacher discourse practices are able to leave a significant impact on students' perceptions and empowerment in relation to science education. Similarly, Kucukaydin (2019) investigates teachers' discourse in science education in

Turkey at the primary and middle-school levels, showing how teacher discourse reflects ideological perspectives as this discourse is impacted by societal factors like patriarchy and curriculum structure, and can impact students' attitude towards science. Hence, these studies reveal the connection between teacher discourse in the secondary classroom in relation to the nuances of science or non-language education.

In relation to CDA, Critical Classroom Discourse Analysis (CCDA) was proposed by Kumaravadivelu (1999) which offers a comparatively unique perspective as it is rooted in the theoretical frameworks of poststructuralism and postcolonialism. It views the classroom as a space where competing ideologies and identities are actively negotiated, rather than simply a place for cultural assimilation (Babaii et al., 2017). Foucault (1972) conceptualises discourse as a social system that shapes and regulates knowledge through power. Another aspect to poststructuralism that Kumaravadivelu (1999) adds is Certeau (1984)'s notion of resistance through everyday tactics that challenge institutional strategies. Bourdieu (1991) adds the concept of symbolic power derived from symbolic capital (e.g., prestige and recognition), to explain how institutions commit symbolic violence by maintaining ideological control and marginalising the weak. Together, these perspectives inform the claim made by CCDA that classroom discourse is ideologically and politically motivated. Kumaravadivelu (1999) critiques poststructuralism for its Eurocentrism and expands the framework through Said's (1978) *Orientalism*, which highlights how Western discourse constructs the colonised as inferior. While Said focuses on colonial discourse, Bhaba (1985) explains how the colonised imitate their colonisers, and how it is a subversive act leading to hybridity and the space for resistance and rebellion within the system. By integrating these perspectives, Kumaravadivelu (1999) broadens the scope of discourse analysis from micro-level interactions to macro-level ideological critique, framing the classroom as a "site of struggle"

(p.475) where identities, ideologies, and resistances are constantly negotiated. CCDA, then, builds on poststructuralist and postcolonial theories to interrogate the discursive practices within the classroom that reproduce or resist linguistic and ideological hierarchies.

CCDA has been implemented as a framework to examine various sociopolitical issues in different education levels of classroom discourse. At the schooling level, Wenger et al. (2004) employ CCDA to analyse the culturally responsive practices of bilingual paraprofessionals in secondary schools across three U.S. states. Their study draws attention to the vital yet often undervalued role these educators play to support ELL (English Language Learner) students. CCDA is used to illustrate how these paraprofessionals subvert Western-dominant discourse to create a more inclusive environment for their ELL students. Furthermore, Kapp (2010) challenges prevailing assumptions about academic literacy in the South African setting by examining the lived experiences of secondary school students from black, working-class backgrounds. Using a critical ethnographic lens as proposed in CCDA, the study reveals that students' complicated relationship with the English language leads to broader struggles regarding identity, belongings, and agency in unstable social and educational contexts. On the other hand, in the higher education sphere, Yi (2020) uses it to explore how Korean graduate students in the U.S. negotiate their academic identities and resist cultural and linguistic marginalisation. Though often interpreted as passive through their silence, the students exercised agency in classroom discourse by resisting stereotypes and demonstrating active engagement. CCDA in this study helps to bring to the forefront the subtle yet effective ways in which students challenge dominant power structures. Additionally, Tian and Dumlao (2020) use CCDA to investigate ways in which positioning, power dynamics, and resistance influence learners' identity construction in an EFL classroom in a Thai university. Over a period of six months, they noticed how students negotiate power through language use,

interactional tensions, and shifting roles in classroom discourse. The findings confirm CCDA's assertion that the classroom is an evolving space where identity and power are continually shaped and remolded through interaction. While there are studies existing in the schooling level, particularly at the secondary level, they are relatively scarce as opposed to the broader applications of CCDA in the higher education level, particularly in postcolonial contexts such as Bangladesh. Given that students begin forming their identities and learning how to express themselves through language during their school years (Ryan & Johnson, 2009), it is crucial to explore further into the discursive practices that occur in a secondary school classroom. To that end, this study explores the broader ideological implications of classroom discourse in a secondary-level STEM classroom.

This study is grounded in poststructuralist and postcolonial theories in an attempt to examine how teacher discourse in STEM classrooms is ideologically constructed, specifically targeting Southern English features. The presence of Southern English in classroom discourse offers the possibility of subverting and resisting the Standard English ideologies that control and define EM schools. By connecting classroom discourse to broader ideological implications, the study highlights the role of EM schools in perpetuating colonial legacies and overlooking the sociolinguistic realities of non-native speakers.

While existing studies have examined teacher discourse in STEM classrooms (Hanrahan, 2005; Kucukaydin, 2019), how teacher discourse reflects dominant language ideologies (Metz, 2018), and explored language practices in EMI contexts in the Global South (Ali and Hamid, 2018; Rahman and Singh, 2021), what remains under-examined is how such discourse might be interpreted through Southern knowledge systems through the lens of Southern English, which emphasises locally situated, pluralistic, and culturally embedded language practices (Hamid,

2023). Moreover, EMI at the schooling level remains under-researched (Sah, 2022), and the application of CCDA in this setting is also limited (Wenger et al., 2004; Kapp, 2010) compared to higher education contexts (e.g., Yi, 2020; Tian & Dumlao, 2020). Given that students form identities and navigate discursive practices during their schooling years (Ryan & Johnson, 2009), it is important to explore the linguistic practices occurring in these formative spaces, which is why this study focuses on secondary classrooms of an EM school. These institutions, shaped by colonial legacies and neoliberal market pressures, are key sites where Standard English ideologies persist and are reproduced, yet they have received limited scholarly attention. This study addresses these gaps by using CCDA to examine teacher discourse in STEM classrooms of a mid-tier EM school in Dhaka. It focuses on identifying features of Southern English and analysing how these features interact with or challenge Standard English ideologies associated with EM schools. By doing so, the study extends the literature on World Englishes, language policy, and classroom discourse, and offers new insight into the sociolinguistic realities of English pedagogy in postcolonial contexts.

Chapter 3: Methodology

3.1. Introduction

This chapter outlines the methodology that was followed to conduct this study. It contains information about the research approach and design, followed by the setting and participants, how data was collected and analysed, and, finally, the ethical considerations.

3.2. Research Approach and Design

This study adopted the qualitative and interpretative approach to conducting and analysing a case study and classroom observations, informed by Wiesner (2022). It was guided by the social constructivist paradigm, which entails that knowledge and meaning are co-constructed through social interactions, historical contexts, and cultural norms (Creswell, 2009), treating the classroom as a site of ideological struggles shaped by sociopolitical factors (Kumaravadivelu, 1999). Aligning with the social constructivist goal of relying on participants' practices and its complexities, this study applied a case study design on a mid-tier EM school, gathering classroom recordings and observation data to examine EM school teachers' linguistic choices in a STEM classroom, regarding standard and nonstandard language use. It, then, identified Southern English features in this discourse, and explored the broader ideological implications that follow the tensions between Standard English and Southern English.

3.3 Setting and Participants

A mid-tier EM school in Dhaka, Bangladesh was chosen as the subject of the case study for this research. This level of institution was chosen rather than a high-end school as language use in mid-tier schools tends to be more flexible, allowing for greater negotiation between different variants of English. In contrast, elite EMS typically enforce stricter rules to maintain Standard English norms, making mid-tier schools a more suitable setting for exploring the potential of

Southern English emerging in classroom discourse. A case study was conducted as it deviates the focus from the amount of data to the quality of it, allowing for a richer exploration of the collected data and a “thick description as well as thick explanation” (p. 477) as encouraged by CCDA (Kumaravadivelu, 1999).

Four subjects—mathematics, physics, chemistry and biology—were chosen to provide a comprehensive view of linguistic practices across STEM disciplines. Seventh-grade classrooms were chosen as students at this stage (13-15 years old) are in a critical period of linguistic development. The language used in their education can have long-term effects given that students start to form their linguistic identities and sense of articulation during their schooling period (Ryan & Johnson, 2009). Investigating classroom discourse at this level provides insights into how language ideologies are introduced and reinforced during formative years. Furthermore, critical concepts in science are introduced during this stage of education.

A purposive sampling has been used to select both the school and the teachers for this research (Wolf et al., 2016). The school was selected based on its label as a mid-tier institution in an urban area, and its willingness to participate in the study. The criteria for selecting participants included their subject specialisation (mathematics, physics, chemistry, and biology) and the grade level they taught (seventh grade). This sampling approach ensured that the participants’ classroom discourse would offer a meaningful exploration of language ideologies across the target disciplines.

The participants of this research are four EM school teachers teaching each of the aforementioned subjects to seventh-grade students in the selected school. For the sake of anonymity, all teachers have been assigned pseudonyms. Sayem (male, late-thirties) teaches mathematics and is a seasoned professional who has been with the chosen institution for 15 years.

Tasnim (female, mid-thirties) teaches physics and has been teaching at the institution for a year, however, has plenty of years of experience prior. Sabrina (female, late-forties) teaches chemistry with 20 years of pedagogical experience, making her a seasoned professional as well. Maisha (female, mid-thirties) teaches biology and has been teaching at that institution for 7 years. All teachers in this sample have undergraduate and postgraduate degrees, and the teachers with more years in teaching have undergone some form of official teacher training. The sample includes teachers with varying levels of experience, ranging from novice to highly experienced, to allow for variation in language choices in classroom instruction.

3.4. Instrument and Data Collection Procedures

According to Kumaravadivelu (1999), critical ethnography constitutes compiling data from multiple sources, be it spoken, written, audio or video. In line with this approach, this study used classroom observations as the primary data collection method. In addition, to assist analysis and further document the linguistic and interactional elements of teacher discourse, a critical observation checklist was used, adapted from Babaii et al. (2017). These instruments were chosen and adapted to align with the study's objectives, ensuring that the observational data collected provided detailed insights into the teacher discourse in STEM classrooms.

3.4.1 Classroom Observations

This study employs non-participant classroom observations to document authentic instructional practices in English medium STEM classrooms. Non-participant observations were done to minimise researcher interference and ensure that natural classroom dynamics were preserved. The observations spanned four weeks, covering lessons in mathematics, physics, chemistry and biology, summing up to 12 classes having been observed. Each class session lasted 40 minutes, adding up to 8 hours of data which was audio-recorded and transcribed for analysis.

3.4.2 Classroom Observation Checklist

To facilitate and narrow down the classroom observation data, a critical observation checklist was used, adapted from Babaii et al. (2017). The questions in the checklist were divided into two sections: the interactional section shines light on the interaction between the teachers and students in the classroom to be able to dissect them in the context of broader ideological perspectives, and the discourse section focuses on identifying the features of Southern English as identified beforehand.

The purpose of this dual-method was to facilitate close collaboration with the discourse itself and bring attention to the broader contextual dynamics of the classroom as a site of social and ideological constructions. All recordings were done with the explicit knowledge and permission of all four teachers. All names and identifying information regarding the participants have been kept anonymous in accordance with ethical research practices.

3.5 Data Analysis

The method of analysis here is thematic and informed by principles of critical ethnography as per the CCDA framework (Kumaravadivelu, 1999) to be able to carry out successive, close readings of the classroom recordings transcribed assisted by the observation checklist, in order to search for recurrent patterns of language use, especially where such patterns revealed recurring tensions between Standard English norms and local characteristics of Southern English.

The analysis had three steps, guided by Clarke and Braun (2016). First, the transcripts were used to examine the linguistic choices made by STEM teachers in regard to their use of standard and nonstandard varieties of English. Next, the aforementioned linguistic features of Southern English were identified in the nonstandard teacher discourse. These features were then interpreted in the broader classroom context to identify how they were treated: whether they were corrected,

normalised, or ignored. Finally, the transcripts were again analysed to address the third objective of the research, which is to connect this teacher discourse to ideological foundations, particularly colonial dynamics and dominant language ideologies. As per the CCDA framework, the study did not view the classroom as its own microcosm, rather it attempted to place teacher classroom discourse within broader ideological systems of poststructuralism and postcolonialism as brought out in CCDA.

By going back to selected important data and examining them through both the critical observation checklist and the theoretical literature in the CCDA framework, this study aimed to produce what Geertz (1973) refers to as thick descriptions, which is not only a description of what is said but what it meant in a broader multifaceted sociocultural context.

3.6. Ethical Considerations

The study maintained standard ethical practices when collecting data from participants. Before any data collection occurred, the participants were provided detailed information on the study, including its purpose, procedures, risks, and benefits. Their informed consent was obtained, and they were made aware that their participation is fully voluntary and could be revoked at any point of the research without any consequences. Classroom recordings were carried out after receiving explicit consent from the teachers. To maintain confidentiality and anonymity, all identifying information of teacher and students were removed during transcription. Furthermore, approval was sought and granted by the relevant institutional authorities to conduct the fieldwork at the school premises. Finally, the study utilised triangulation of data using a combination of classroom recordings and observation checklists to strengthen the credibility and validity of the findings in their role of addressing the research questions.

Having outlined the methodology, the next chapter presents the results of the thematic analysis of the collected classroom and observation data.

Chapter 4: Findings & Analysis

This chapter presents an analysis of the data collected from classroom observations, focusing on the linguistic choices regarding Standard English made by STEM teachers, how the linguistic features of Southern English appear in their discourse, and the broader ideologies embedded in their language choices. The use of Critical Classroom Discourse Analysis (CCDA) helped uncover these findings by examining the ways in which teachers use Southern English or standardise their language and show how their choices reflect deeper tensions related to language, power, and knowledge systems in the context of Bangladesh.

4.1 RO1: Examining EM School Teachers' Linguistic Choices regarding Standard English use in STEM Classrooms

In this study, Tasnim was found to almost exclusively use Standard English in the classroom. The teacher's language was formally structured, grammatically "correct", and closely represented textbook registers:

Extract 1

(1) So, have you ever seen a credit card or debit card in person?

Student: Miss, is credit card real? We can use it?

(2) Okay so what is a pulse, by the way? A pulse is basically a short burst of energy. It's a sudden burst of energy.

(3) What's the SI unit? The unit for speed of light? Metres per second. Very good. The unit they gave you...in the book, that's kilometres per second. Try not to use kilometres per second...They've mentioned it in kilometres per second, don't use that. It's not a standard unit.

(4) Alright so, who amongst you can tell me the name of the family to which light belongs?

(5) Tasnim: Okay, so the next question. [student name], can you reiterate the changes in energy that happen in a CD? Who wants to say? Who wants to reiterate?

Student: Miss, what's the question?

Tasnim: The same thing you answered but I want to hear it from someone else.

In the above excerpt, (1) shows how Tasnim refers to credit and debit cards, which may not resonate with students (as evident from the question asked by a student) across different socioeconomic backgrounds, especially in Bangladesh, where the method of payment in a majority of domains is cash. Similarly, in (2), the teacher makes use of the word “pulse”, which, in Southern vocabulary, is generally associated with a heartbeat, but, here, is used to describe a “short burst of energy”. (3) shows an alliance with a Western standard of metric, not leaving space for variation. The phrasing in (4) is formal and can potentially be inaccessible to students who are not accustomed to such registers and may not be able to process them as well as informal or hybrid speech. In a similar vein, Tasnim makes use of the word “reiterate” in (5), which is followed up by a need for clarification from the student, showing that adherence to formal and complicated (re: westernised) vocabulary may not always be accessible to students, and unconsciously dismisses their familiarity with their own linguistic and cultural identities.

A similar trend of a strong orientation toward Standard English can be seen in the case of Sayem, teaching mathematics:

Extract 2

(1) Simultaneous equations can be solved in three different ways. What are the three different ways? Elimination method, substitution method, and the graphical method.
Right?

- (2) There are two ways of doing it; going by the LCM method or going by the criss-cross method.
- (3) Coefficient is a numerical value that is connected to each variable. What is a coefficient again? A numerical value connected to each of the variable on both equations.
- (4) What are these two options? Either by finding the LCM of the coefficient and multiplying the original or given coefficient accordingly to get that LCM method.
- (5) I'll show the work of substitution method as well but you'll find it that elimination method is more convenient and comfortable to work with rather than the substitution method, okay?

In most of Sayem's discourse, a pattern is seen of using Western mathematical terminology such as "elimination method" (1), "substitution method" (1), "graphical method" (1), "LCM method" (2). It reflects the implicit expectation that students should assimilate to these global/westernised standards with no locally-rooted explanations or logic. In most of Sayem's discourse, there is an evident effort to explain everything in English (abiding by the English-only requirement of an EM classroom). Examples include phrases like "connected to each variable" (3), and "multiplying the original or given coefficient accordingly" (4). These instances lack contextually unpacking the concept or linking it to a locally rooted analogy.

However, an interesting aspect of both Sayem is that there are slight deviations from Standard English, such as grammatical variation by using "variable" instead of the grammatically correct "variables" in (3), and the lack of articles before the names of the methods in (5). However, these slips in speech are incidental and undesired rather than strategically used to facilitate linguistic gaps or validate local varieties.

Both Tasnim and Sayem adhered to Standard English, unconsciously steering away from any form of local linguistic hybridity in their discourse. While slight grammatical or lexical deviations did occur, they were unintentional and not seen as pedagogically relevant. The classroom remained a monolingual environment despite the multilingual identities of both teachers and students. This absence of local variation may be reflective of the teachers' personal ideologies or institutional expectations placed on them in the context of preparing students for international examinations like O- and A-Levels.

RO1 reveals the linguistic choices of teachers who conform to Standard English norms as they are imposed in the EM classroom. This kind of classroom in a postcolonial context exposes students to a Western-centric form of education where the strive for competence in English leads to the negligence of the student's first language (Phillipson, 2018). Hence, opportunities are missed to leverage the students' own linguistic and cultural backgrounds in meaning-making. Rather, the dominance of Standard English ideologies is reaffirmed in the classroom, where using the correct form of English is seen as a pedagogical necessity.

The next section examined the other two teachers' classrooms, which presented a striking contrast to the former two. Their discourse revealed a different linguistic reality, presenting the complexities of the monolingual expectations of the EM sphere.

4.2 RO2: Identification of the Features of Southern English in EM Schools Teachers'

Classroom Discourse in STEM Classrooms

Standing as an opposition to Standard English, Southern English (Hamid, 2023) embraces the localisation of a language and how it is adopted by a culture to meet their communicative needs. This sociolinguistic reality does not escape the EM classroom as Southern English features are evident in these spaces as well.

4.2.1 Use of culturally relevant terms and examples

Both Sabrina and Maisha make use of culturally rooted terms and examples in their discourse, showing how scientific concepts can be connected to the students' immediate sociocultural world:

Extract 3

- (1) Sabrina: Write two uses of ammonia. First one is fertilisers.
- (2) Sabrina: Have you seen ethanoic acid? It is white vinegar.
- (3) Sabrina: Carbonic acid produce করে কিন্তু ঐটা partially dissociate হয় so gas থেকে যায়.

আমরা যে coke এর যে carbonated drinks যেগুলো, gas এর জন্যই তো mainly খাই ঐটা তাই না? যখন gas থাকে ঐটা আরাম লাগে খেতে.

(Carbonic acid is produced but it is partially dissociated so gas remains. We drink carbonated drinks like Coke mainly for the gas, right? When we get gas, it feels comfortable to drink.)

- (4) Maisha: You have nearly half a bucket of blood—5.5 litres—in your body.
- (5) Maisha: Then comes the red cells. They are wheel-shaped.
- (6) Maisha: What is blood? It's a liquid thing, right?

In (1), Sabrina makes use of the example of fertilisers, which is something all students in Bangladesh (regardless of the instructional medium) grow up reading about and are familiar with as agriculture is an integral part of the country's economy. Similarly, (2) also makes use of the example of white vinegar, which is widely available in all Bangladeshi households, and recognisable to students. To explain weak acids, Sabrina uses the example of “coke”, which refers to any brand of carbonated drink and talks about how it is used to relieve “gas”, which refers to acid reflux. The use of such culturally relevant terms not only validates the students' own local

identity but also eases the cognitive load by typing familiar items into scientific concepts. Similarly, Maisha uses the phrases “half a bucket” (4) and “wheel-shaped” (5) which are comparisons that are locally rooted, making the abstract content visually intuitive for the students. Lastly, Maisha using the word “thing” instead of “substance” presents an informal vocabulary that is a deviation from Standard English norms which may seem as incorrect or failed but excels in its function of communicating the concept effectively to the learner (Hamid, 2023).

4.2.2 Blending of English with Bangla in both formal and informal contexts

Code-switching, or in some instances, translanguaging, emerges as a central feature in Sabrina’s classroom discourse:

Extract 4

(1) [when explaining the role of a catalyst] A substance that is—reaction টা কে faster

করার জন্য একটা substance add করা হয় otherwise reaction will be slow.

(A substance that is—to make the reaction faster, a substance is added, otherwise the reaction will be slow.)

(2) কারণ break down করার জন্য কি লাগবে? You need to supply heat. Force apply

করতে হবে otherwise break করবে না.

(Because what is needed to break down? You need to supply heat. Force must be applied otherwise it will not break.)

(3) The triangle সবসময় arrow-এর নিচে লিখতে হবে. It means heat. ঠিক আছে?

(The triangle should always be written below the arrow. It means heat. Okay?)

(4) So acid is a substance that produces hydrogen ion when dissolved in water. Clear?

ঠিক আছে?

(So acid is a substance that produces hydrogen ion when dissolved in water.

Clear? Okay?)

(5) So partially dissolve হলে slightly acidic হবে যেটা তুমি খেতে পারবা, যেটা

harmful না. ঠিক আছে? So strong acid কি হবে? That dissociates completely. আর weak acid? That dissociates partially.

(So, when partially dissolved, it will be slightly acidic which you can eat, which is not harmful. Okay? So, what about strong acid? That dissociates completely. And weak acid? That dissociates partially.)

In (1) and (3), Bangla verbs and objects are used with English to be able to maintain fluency from a bilingual perspective and uphold the momentum of instruction while keeping the message clear. Similarly, in (2), Sabrina uses Bangla to ask the question and seamlessly switches to English to answer the question. It reveals the flexibility that bilingual teachers demonstrate when they use their full linguistic repertoire. Sabrina also frequently uses “ঠিক আছে?” (4), (5) alongside asking “Clear?” to check students’ understanding and manage the flow of the classroom. It works as a way to maintain interpersonal connection and clarify comprehension. These instances show that code-switching is not a fallback or sign of deficiency when it comes to English, rather it is a resource that can be used for expressiveness and clarity in teaching (Hamid, 2023).

4.2.3 Sentence structures influenced by Bangla syntax, such as variations in word order

A majority of Maisha’s syntactic patterns were shaped by Bangla rather than English norms:

Extract 5

(1) Up to 4.07, we are done right?

(2) What’s the colour of the blood?

(3) And then comes what? Red blood cells.

(4) This process, it is going on all day long...

(5) So up to this, clear everyone? Clear all of you?

In (1), (2), (3), and (5), reflect word orders that are deemed ungrammatical in Standard English norms but reflect Bangla syntax, inspired by Bangla rhythm and phrasing. In (1), the placement of “up to 4.07” would be at the end if it were following standard grammatical rules, similarly, in (5), “up to this” is placed in the beginning rather than the end, reflecting how this would be spoken in Bangla, directly translated to English. In (4), the subject (“this process”) is emphasised before it is explained (using “it” afterwards), which reflects Bangla sentence structures.

4.2.4 Pronunciation features influenced by local phonological systems

Maisha also demonstrated pronunciation patterns shaped by Bangla phonology.

Extract 6

(1) Water, digestive food, waste (/wæst/) substances, and some hormones inside it. Clear?

(2) We all know what blood (/blʌ:d/) is, right?

(3) Then comes the red cells. They are wheel (/vil/) -shaped.

In (2), “blood”, which is pronounced as /blʌd/ in both Standard British and American English, is pronounced as /blʌ:d/, which shifts away from the central vowel /ʌ/ to a more back or rounded vowel which is typical of Bangla vowel systems. In (1), “waste”, which is typically pronounced as /weɪst/, is said as /wæst/, replacing the diphthong /eɪ/. Similarly, in (3), “wheel” is pronounced as /vil/ instead of its standard /wi:l/, replacing the /w/ glide with the labiodental approximant /v/. These examples point to the natural application of Bangla phonology to English words, which follow a pattern shaped by the teachers’ first language and not carelessness or lack of effort.

RO2 explored the Southern English features in teachers' discourse, showing that EM teachers also frequently make use of these features to meet instructional demands of STEM subjects. This is done through culturally relevant terms and examples, code-switching between English and Bangla, sentence structures inspired by Bangla syntax, and pronunciation patterns that follow Bangla phonology. This locally-rooted variety of English and its features are not only intelligible, they are pedagogically useful as they help to connect students' everyday language practices with their academic content (Rashid, 2014).

The presence of Southern English in the EM classroom then builds a tension between the institutionalised expectations of Standard English and the realistic paradigm of Southern English. The next section analyses these micro-level tensions in classroom practices in light of macro-level ideological frameworks informed by CCDA (Kumaravadivelu, 1999).

4.3 RO3: Exploring the Ideological Implications of the English Varieties Used by EM School Teachers' in STEM Classrooms

4.3.1 English and Symbolic Violence

As seen in RO1, Sayem and Tasnim's discourse aligns predominantly with Standard English norms in the classroom. Their English is formal, grammatically polished, and globally normalised:

Extract 7

- (1) Tasnim: A pulse is basically a short burst of energy.
- (2) Tasnim: Alright so, who amongst you can tell me...
- (3) Sayem: Coefficient is a numerical value that is connected to each variable
- (4) Sayem: ...multiplying the original or given coefficient accordingly...

These linguistic choices cannot only remain stylistic, they show compliance to institutional expectations that uphold Standard English as the standard for EM schools. In doing so, these teachers unconsciously legitimise a model of English where Standard English is positioned as the “authorized language” (p. 76) in discourse, participating in the symbolic violence of marginalising non-standard varieties (Bourdieu, 1991). Hence, their adherence to Standard English led to a monolingual classroom environment where students’ own linguistic repertoire remained largely unused, as noted in the classroom observation checklist. This suggests a subtle but powerful form of language policing, where due to the teacher’s own restricted use of the language, students also conform to such restrictive norms, suppressing their linguistic and cultural identities.

4.3.2 Southern English as a Form of Resistance

In contrast, teachers like Maisha and Sabrina, as examined in RO2, made discursive choices that deviated from Standard English and presented the use of Southern English:

Extract 8

- (1) Maisha: You have nearly half a bucket of blood...[culturally situated example]
- (2) Maisha: They are wheel-shaped. [culturally situation example]
- (3) Sabrina: ...reaction টা কে faster করার জন্য একটা substance... [blending of English and Bangla]
- (4) Sabrina: So strong acid কি হবে? That dissociates completely. আর weak acid? That dissociates partially. [blending of English and Bangla]

However, this was not just an act of deviation from the perpetual standard, but a subtle form of resistance to the authoritative policing of the language (de Certeau, 1984). Here, hybridity in the language—such as blending Bangla and English and culturally situated examples—is not to reject

English, rather it is to reclaim ownership of it in ways that are meaningful in a local capacity; subverting the colonisers using their own language (Bhabha, 1985).

Such tactical hybridity counters the monolithic view of English in the EM sphere. Through its engagement with the full linguistic repertoire of both the teacher and students, it makes Southern English a “counterdiscourse” (p. 476) to the prevailing hegemonic discourse of Standard English and aligns with CCDA’s goal of teachers aligning the sociocultural needs of students with the classroom (Kumaravadivelu, 1999). Its effectiveness is evident through the interactions among the teachers and students in these classrooms using the observation checklist, where students used a blend of English and Bangla when asking questions to Sabrina and Maisha, showing how students felt comfortable to use their own linguistic repertoires and not be restricted to prioritising Standard English.

4.3.3 Classrooms as Sites of Ideological Tension

As stated by Kumaravadivelu (1999), the classroom is not just a place of instruction, it is a site of ideological struggle. The way teachers speak, the examples they use, the choices they make in regard to language are all tied to broader histories of colonialism, power and knowledge. The classroom is where standard language ideologies are reproduced, but it is also where they can be altered.

When Standard English is viewed as the default medium of instruction, it upholds colonial language systems that prioritise Western English norms and culture over local ones. It remains as a daunting reflection of our colonial past where local languages and cultures were oppressed officially and unofficially to be able to validate the coloniser’s language and dominance. These colonial interests have persisted till today, where EM schools shape their education to satiate the

British curriculum and examination standards. These institutional ideologies and expectations are reflected in the discourse of Sayem and Tasnim.

However, the presence of Southern English as a form of resistance occurs through Sabrina and Maisha complicates the narrative. These teachers embraced the hybridity of English and claimed it as their own in their usage, decentering English as Western-centric, and showing its adaptability and pluralistic nature. As Hamid (2023) argues, Southern English aims to position itself as equally legitimate to its Northern counterparts, not replace them.

RO3 reveals that the discourse in EM STEM classrooms remains a space of tension between institutionalised linguistic expectations and the sociocultural realities of teachers and students. Standard English is the recognised, dominant model, but Southern English emerges as a counter-discursive practice. These instances reveal the agency of teachers as negotiators of ideologies and not just neutral transmitters of knowledge, especially in the STEM classroom. Through the lens of CCDA, it is shown that classroom discourse is not neutral or existing in a vacuum, it is ideological and shaped by the political, social, and historical realities surrounding it. The choice to speak in a particular variety of English reflects larger struggles over whose knowledge is valued and whose voices are heard.

Chapter 5: Discussion and Conclusion

5.1 Discussion

This study analysed the linguistic choices of four STEM teachers from an EM school, revealing pedagogical tensions between the use of Standard English and Southern English in the classroom discourse. Findings from classroom observations and transcriptions show that two teachers (Sayem and Tasnim) demonstrated a consistent preference for Standard English, defined by formal, grammatically sound, and Westernised terminologies. These teachers maintained English-only practices that are prevalent in EM classrooms, rarely incorporating locally or culturally relevant linguistic features. While there were occasional deviations from Standard English, they were incidental rather than intentional. Their discourse reflected the dominant ideology of positioning Standard English as the ideal form of English, often at the expense of the student's own cultural and linguistic realities.

A striking contrast was drawn by the other two teachers (Sabrina and Maisha), who used a more flexible approach to their discourse, interrogating Southern English features which aligned with students' lived experiences and knowledge systems. Their classroom talk offered frequent code-switching between English and Bangla, Bangla-influenced syntactic and phonological patterns, and culturally familiar examples and expressions. These practices were not a sign of linguistic deficiency, rather a resource to further comprehension, classroom rapport, and concept-teaching.

The existence of these two varieties of English under the same EM classroom setting reveals a form of linguistic showdown where institutional expectations meet sociolinguistic realities. The continued use of Standard English reflects a form of symbolic violence (Bourdieu, 1991) where local varieties and knowledge systems are actively dismissed or marginalised.

However, the presence of Southern English reveals a form of resistance to institutionalised norms that are subtle yet impactful in its nature (de Certeau, 1984). It subverts the colonisers using their language (Bhabha, 1985). Putting the two varieties in question against each other reveals the role teachers play in establishing certain ideologies in the classroom, positioning it as not just an educational space but an ideological one as well.

The findings of this study align with the notion that EME is deeply shaped by colonial legacies and the dominance of Inner-Circle norms (Bolton, 2006; Imam, 2005; Kachru, 1992). It highlights how EM schools reproduce standard language ideologies, where British and American English are valorised, by showing how some teachers adhere to Standard English norms (Jahan & Hamid, 2019; Metz, 2018). However, the analysis also showcases a notable gap between language beliefs and practices (Spolsky, 2004), showing how some teachers deviate from the Standard English norms and implement locally rooted uses of the language to facilitate learning. This discrepancy aligns with the findings from Ali and Hamid's (2020) and Rahman and Singh's (2021) studies, which argue that despite policy pressures, non-standard English practices remain widespread in the EM classroom. Above all, while Southern English has been explored from a communicative capacity, the findings of this research explored its features in a classroom setting, expanding its scope to a pedagogical realm.

According to Kumaravadivelu (1999), classroom discourse is determined by social, political and historical factors, which resonates with the findings of this research. The contrast between teachers who followed Standard English and those who embraced Southern English reflects "discursive formations" (p. 460), or thinking and speaking shaped by ideologies, that have been shaped by colonial legacies and are maintained through institutional norms within EM schools in Bangladesh. These school classrooms are not isolated learning environments, rather

they operate within a wider political context where the language used in the classroom is closely linked with power and identity. Furthermore, CCDA views the classroom and its discourse as a part of the larger society where many forms of dominance and inequalities are reproduced. This is shown through the data where the strict adherence to Standard English discourse in Sayem and Tasnim's classrooms delegitimised and dismissed non-standard forms. This micro-level discourse practice reflects broader macro-level colonial legacies that have persisted in the EME system. Conversely, the use of Southern English by Sabrina and Maisha show what CCDA identifies as forms of resistance. Hence, classroom discourse becomes a site of ideological tension where both hegemonic and counterhegemonic discourses exist and are negotiated.

5.2 Conclusion

This study set out to examine the linguistic practices of EM school teachers in STEM classrooms in Bangladesh, with a focus on how Standard English and Southern English are used, and the ideological implications of these choices. Through the lens of CCDA (Kumaravadivelu, 1999), three key findings were brought forth.

Two of the four teachers (Sayem and Tasnim) in question followed Standard English norms in their classroom discourse. Their language use was formal, grammatically rigid, and aligned with Western-centric standards of knowledge. These choices reflected institutional expectations, but also marginalised the students' own linguistic repertoires and contributed to a monolingual, Western-centric classroom environment. This finding presents the need for teacher training programs that encourage critical awareness of their own linguistic choices. Teachers should be equipped to reflect on their discourse and understand its role in reflecting and shaping ideologies in the classroom.

The other two teachers (Sabrina and Maisha) frequently used Southern English features in their discourse, blending English and Bangla, using culturally relevant examples and terms, and drawing from local syntactic and phonological patterns. As opposed to the former teachers, these teachers showed subtle but impactful forms of resistance to the dominant language ideologies at play, allowing students to engage more comfortably and meaningfully in the STEM content by appealing to their comprehension and cultural connection. This finding implies that Southern English should not be viewed as a linguistic error, but rather a pedagogical asset. Institutions must begin to acknowledge and integrate locally rooted knowledge systems by creating space for Southern English in textbooks, assessments, and classroom policies.

The presence of both English varieties in the EM classroom revealed it as a site of ideological tension. Standard English reinforced colonial language hierarchies while Southern English challenged them by demonstrating equally valid and effective language practices that are locally and culturally relevant. Hence, teachers' discourse reflected broader ideological paradigms and played a role in either reproducing or resisting dominant language beliefs.

This ideological tension points to a larger structural defect—the lack of centralised language policies in EME in Bangladesh. Without clear and inclusive guidelines, outdated colonial ideologies will continue to loom in classroom practices unchecked and unchallenged. Therefore, this study calls for a rethinking of the EM framework at the policy level, advocating for pluralistic and decolonial language policies that focus on the need to use English more equitably and making space for language practices that are not only effective but also culturally affirming.

5.2.1 Limitations and Future Directions

This qualitative case study solely focused on the classroom discourse in the STEM classroom at a mid-tier EM school in a non-native postcolonial context. As a result, the findings

may not be representative of the EM school demography in the region, given there are various types of EM schools in the country in urban metropolitan, suburban and rural regions. Additionally, due to time constraints and lack of funding to conduct this independent study, it was not possible to collect additional data from other schools. However, the findings of this study do highlight important insights regarding the variety of English used in a postcolonial context like Bangladesh. It builds on the ideas proposed by Hamid (2023), adding to the growing body of knowledge about English language varieties in Bangladesh. Future research can build on the findings from this study, exploring language practices of other stakeholders such as students, school administrators, and teacher trainers, which will help uncover diverse ways that Southern English and other locally-rooted varieties are present and handled in the classroom discourse of different educational institutions across Bangladesh.

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Appendix A

Classroom Observation Checklist

Part 1. Interaction

1. Did the teacher show respect for different linguistic expressions, including the use of localized syntax or culturally relevant analogies?
2. Did the teacher keep direct surveillance on language use, correcting Southern English features to align with Standard English norms?
3. Did the teacher seek alternative solutions, allowing students to explain ideas in their own words, even if using localised language?
4. Did the teacher favor answers aligned with Standard English norms or encourage creative responses using localised language features?
5. Did the teacher's linguistic choices create a classroom environment where students felt comfortable expressing ideas using their own linguistic repertoires, or did they seem hesitant due to the prioritisation of Standard English?

Part 2. Discourse

1. Did the teacher use culturally relevant terms or localised expressions when explaining STEM concepts?
2. Did the teacher blend English with Bangla during explanations or discussions?
3. Did the teacher use sentence structures influenced by Bangla syntax (e.g., variations in word order)?
4. Did the teacher's pronunciation reflect local phonological patterns (e.g., stress, intonation, or vowel sounds)?
5. Did the teacher make use of analogies, metaphors, and examples grounded in local contexts?

Appendix B

Informed Consent Form

INFORMED CONSENT FORM

TITLE OF STUDY

How Teachers Use English in STEM Classrooms in English-Medium Schools in Bangladesh

PRINCIPAL INVESTIGATOR

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PURPOSE OF STUDY

You are being asked to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information.

The purpose of this study is to look at how English is used in English-medium schools in Bangladesh, especially in science and math classes. It wants to understand whether teachers mostly use a "standard" British or American style of English or if they also incorporate the way English is naturally used by people in Bangladesh. The study will focus on how the way teachers talk in class may align with old ideas left behind from colonial times, or whether they are using English in ways that fit their and the students' own culture and lives.

STUDY PROCEDURES

If you agree to participate in this study, you will be a part of classroom observations conducted by the primary investigator. They will visit your classrooms and observe lessons without interfering. Lessons in mathematics, physics, chemistry, and biology for Grade 7 will be observed over a period of four weeks. During these observations, the lessons will be audio-recorded to document how English is used by the teachers. No video-recording will take place. All recordings will only capture the teacher's and students' voices, and no names or personal details will be shared in the research. The recordings will later be converted to text and analysed to understand the language being used. A checklist will also be used by the researcher during the observations to help with the analysis.

RISKS

There are no major risks in participating in this research. It only looks at how language is used in the classroom and does not intend to judge the teachers or the students personally. You may decline to answer any or all questions and you may terminate your involvement at any time if you choose.

BENEFITS

There will be no direct benefit to you for your participation in this study. However, we hope that the information obtained from this study may help show how English is really used in classrooms in Bangladesh, not just how it is expected to be used. It could help schools, teachers, and education policymakers understand the importance of respecting local ways of speaking English. In the long term, it might lead to better teaching practices that are fairer and more inclusive for Bangladeshi students.

CONFIDENTIALITY

For the purposes of this study, your participation will remain confidential and every effort will be made to protect your anonymity, including:

Participant/Teacher Sabrina

- All participants will be assigned code names (e.g. Teacher A, Teacher B) that will be used in all research notes, transcripts, and documents.
- Audio recordings, observation notes, and transcriptions will be securely stored in a password-protected device accessible only to the researcher.
- Any identifying information (such as names of teachers, students, or the school) will be removed or replaced in all research documents.

Participant data will be kept confidential except in cases where the researcher is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse and suicide risk.

VOLUNTARY PARTICIPATION

Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

CONSENT

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Participant's signature _____

Redacted

Date 22.2.25

Investigator's signature _____

Martha

Date 22/02/2025

Participant/Teacher Sabrina