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Critical Discourse Analysis of Sheikh Mujibur Rahman's 7th March Speech

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Abstract

As a political discourse 7th March Speech by Sheikh Mujibur Rahman has been studied to draw the attention to its textual, situational, and social contexts. The study critically analyses the historic speech following Fairclough's (2013) three dimensional approach. The linguistic and formal properties of the speech, the process of the discourse and its socio-political factors are examined in an integrated way. The researcher applies qualitative and emergent research design to discourse analysis of the speech. Both primary and secondary sources of data are used to explore this political speech. The findings of the paper denote the ideologies, power relation, social-political conditions, allusions reflected in the language of the discourse. The investigation also critically interprets the contribution of the extempore to the birth of a nation.

Keywords: Sheikh Mujibur Rahman, Speech, Linguistic, Discourse & Critical Discourse Analysis.

1. Introduction

Though the nation of Bangladesh has been celebrating its independence on 26th March every year due to its formal declaration of the day in 1971, the speech delivered by Sheikh Mujibur Rahman on 7th March of the year was momentum which reinforced and prepared the people of East Pakistan to be united and to stand tall, fight for their own rights, and bring victory for the nation against Pakistan. The momentous speech to over one million Bengalees recipients truly moved them to continue nine-month long war for freedom. During the liberation war period, Sheikh Mujibur Rahman was not present in Bangladesh (formerly East Pakistan/East Pakistan) as he was arrested and taken to West Pakistan (now Pakistan), but his ideology and guidelines moulded in his 7th March speech had been inspiriting the freedom fighters up all the way through liberation war. The objective of the study was to evaluate the historic 7th March speech delivered in 1971. This paper attempted to analyse the speech as a political discourse, and thus approached Critical Discourse Analysis (Fairclough,

2013) to trace the social-historical context, ideology, power relations, and values underlying the speech. It also studied the structural aspects of the speech by using morphological, syntactic, semantic, and pragmatic analysis.

Making an assessment of Sheikh Mujibur Rahman in words is really rocky as the Cuban leader Fidel Castro once compared him to the Himalayas that include 50 mountains. Castro's comparison was not inaccurate because Sheikh Mujibur Rahman spent 14 years of his lifetime in jail to arouse the conscience of the nation to injustice and inequality. He always sought the emancipation of the people of East Pakistan. With his strongest will, he was found to fignt for what was right. On account of his courageous deeds and personal sacrifices for fighting for an identity and rights, people call him by many names like Bongobondhu (The Friend of Bengal), the Father of the Nation (Bangladesh), and the Poet of Politics. Sheikh Mujibur Rahman has been a great inspiration for the nation, and even after his atrocious murder, his 7th March speech is still quavering the streets of the country. He raised his voice for the rights of the fourth class employees of the University of Dhaka while graduating from it that cost him imprisonment and eventually lifetime ban on studentship; routine imprisonment and torture could not resist him to go along with the state language movement. He proclaimed the six point plan for East Pakistan and named the province "Bangladesh", and so on. His sacrifices for the nation and the country made himself a great contributor to making the history of Bangladesh. The proposition would not be untrue that the nation would have never been an independent country if there had not been Sheikh Mujibur Rahman.

Sheikh Mujibur Rahman had a unique drastic voice which made him one of the greatest speakers of all time. His oration was full of constructive thoughts and emotions. He could easily persuade his audience, and pursue solidarity with them by his distinct style of oration. Nowadays the word "politician" has some negative connotations, but with Sheikh Mujibur Rahman the word seems more positive and trustworthy. Being a politician he was not only guided by the political ideologies but also by a collective interest of the oppressed people which is evidently reflected in his 7th March speech in 1971. The speech called for civil disobedience, non-violent and noncooperative movement against the oppression of the government of Pakistan. After the general elections, the government was intentionally avoiding to transfer power to the elected representatives of the people. In his 7th March Speech, Sheikh Mujibur Rahman vocalized

the rights of East Pakistan and demanded the transfer of power to Awami League for its landslide victory in the elections. Twenty-three years of oppression to East Pakistan's ideology, economy and culture caused the discourse to be processed in the speech. The political stimuli and social relations at times ranging from the language movement in 1952 till the general elections of 1970 also accounted for the production of the discourse. The individual style of Sheikh Mujibur Rahman with its distinguished linguistic and non linguistic features was so remarkable that it united the people to stand against oppression and inequality and led the nation to its territorial independence.

2. Literature Review

One of the purposes of this chapter was to review the existing literature on discourse which is the systematic basis of the article. A review of the relevant literature was conducted in order to provide with a theoretical framework for understanding the discourse and its treatment in Critical Discourse Analysis. Several approaches of Discourse Analysis were also evaluated here. Conceptually, the word, discourse as a noun means written or spoken communication or debate. According to Oxford Advanced Learner's Dictionary, discourse is "a long and serious treatment or discussion of a subject in speech or writing", and in linguistics, it is defined as " the use of language in speech and writing in order to produce meaning; language that is studied, usually in order to see how the different parts of a text are connected (436). The term has been defined in several ways at different fields and its meaning varies according to its use. In postmodernism and critical discourse analysis, for instance, the term is treated quite differently evaluating the meanings and values of the spoken talk (Richards & Schmidt, 2010). Discourse analysis often refers to the study of spoken discourse and text linguistics to refer to the study of written language. van Dijk (1997a, cited in Definition of Discourse Analysis, 2016) defined discourse as a form of spoken language, what is said in public speeches.

Foucault (1978, cited in Pitsoe & Letseka, 2013) asserts that discourse can transmit, produce, and reinforce power, but at the same time discourse can undermine and expose power, rendering it unstable and possible to thwart. In every society, the production of discourse is at once controlled, selected, organised and redistributed according to a certain number of procedures, in order "to avert its powers and its dangers, to cope with chance events, to evade its ponderous, awesome materiality" (24).

Foucault continued that power and control of human are exercised in a society. He also tried to mention that both power and resistance to power are wrapped in discourse. Guy Cook (1989, p. ix) writes, "Discourse analysis examines how stretches of language, considered in their full textual, social, and psychological context, become meaningful and unified for their users." Though he also mentioned that the western Greeks and Romans were also concerned with the rules of language and the use of rhetoric distinctly. The approaches used in discourse analysis are not absolute. Critical discourse analysis (CDA) has its range from the communicative context to the social context. The political and ideological apparatuses like power and hegemony would determine different discourses (Wang 2017). van Dijk (1995) indicated that CDA studies comprise "sexism, racism, colonialism and other forms of inequality" (17). In discussing the CDA as an approach, van Dijk tried to set the area of CDA which includes the social problems, the relations between discourse and society, politics, law, language, communication, dominance, religion, social relationships, social influence, solidarity, ideology and so on.

Fairclough (2013) distinguished three stages of critical discourse analysis, which is three dimensional: a) description, b) interpretation, and c) explanation. According to Fairclough, description deals with the linguistic and "formal properties of the text" (21), interpretation interprets the association between "text and interaction" (21), and explanation focuses on the "relationship between interaction and social context (22)". For him, language is a "social practice determined by social structures" (14). He thinks that linguistic properties are social phenomena and vice versa. Fairclough considers discourse as a "whole process of social interaction" (20), whereas text is "just a part of it" (20). For him, a text is a product in the process of production and a resource in the process of interpretation. Social conditions of production and of interpretation are also inseparable components of discourse. Subsequently, the term is made out of or a combination of text, interaction and context (2013). According to van Dijk (2002), a discourse becomes political when it is acted in a political context, such as governing, gathering, legislation, assembly, campaigning, assembly, and so on. An interactional use of language by a politician with his/her relatives does not count as a political discourse, but an interactive speech before the mass of the population could carry a significant political effect. "An eloquent leader can depict enticing goals and convince the supporters to make radical sacrifices, even though the visionary goals are extremely uncertain" (Gärdenfors 2002: 5, cited in Chilton, 2004). Only through language a politician can persuade, "issue commands and threats,

ask questions, make offers and promises" (19), exploit power, or show solidarity (Chilton, 2004, p. 30).

Politicians often use pronouns in their speeches. They mostly use personal pronouns, both subjective and objective, in their political speech. The other types of pronouns like possessive (adjectives too), reciprocal, relative, reflexive, interrogative, demonstrative, and indefinite are also used more or less. Different types of personal pronouns are referred to different antecedents in a political speech. According to Alinezhad & Nemati, the pronoun "I" represents the speaker himself/herself, and s/he often uses "I" to state his/her own personal views and feelings. The speaker uses "we" which involves a group of people and the speaker himself or herself (2019). By using "we", the speaker could easily show a feeling of oneness with the audience to win their support.

Though the personal pronoun "you" usually refers to the audience the politician is talking to, it has multiple functions in a political speech. It is referred either to the audience or to the binary opposition (singular or plural), or used as an indefinite (generic) pronoun. Politicians also have the tendency to use third person plural "they" to separate themselves from the opposition (Håkansson 2012).

The body of literature also includes the historical context of the 7th March speech. The nineteen minutes speech by Sheikh Mujibur Rahman on March 7 in 1971 consolidated the people of East Pakistan to dream of an independent nation where they would live with equality and dignity. It is regarded as one of the monumental records in the history of Bangladesh as it united and enthused 70 million people to fight a nine month long bloody liberation war, and then achieve the final victory against Pakistan. The extempore speech was delivered without a script ("শেখ মুজিবের ৭ই মার্চের ভাষণের নেপথ্যে", 2017) before "a mammoth gathering of a million of people" at the Race Course ground "which marked a turning point in the history" of East Pakistan (Rashid, 2015). Under Sheikh Mujibur Rahman's leadership, the Awami League won 167 out of 169 seats in East Pakistan and 288 out of 300 seats in the Provincial Assembly in the general elections held on 7th December after a devastating cyclone killed at least one million people of East Pakistan of the year (Rahman, 2016). All the elected representatives took an oath never to turn away from the six-point on 3rd January in 1971 at Ramna Race Course. It was the momentum when the M.P's of East Pakistan had the opportunity to form "parliamentary government with full regional autonomy" (Schendel, 123) as they "acquired an absolute

majority" (Rahman, 2016, XXII). Zulfikar Ali Bhutto, the leader of the Peoples' Party, could not accept Sheikh Mujibur Rahman as the Prime Minister of Pakistan, for his selfish ambition and provoked Yahya Khan to postpone the announced date of Assembly. On the 3rd March, a general strike was called by the majority party Awami League demanding the transfer of power (2016). Chhatra Sangram Parishad read out the Manifesto of the Independence at the Paltan Maidan on that day in the presence of Sheikh Mujibur Rahman, but the great leader continued non-violent and non-cooperation movement saying he would announce the next plan of actions on the 7th March ("The 7 Days", 2020).

The historic speech was supposed to be broadcast from Radio Pakistan, Dhaka station, but due to the intervention of the Pakistani government it did not go on the air on 7th March. However, despite the challenges, A.H.M. Salahuddin, Chairman of the Pakistan International Film Corporation (PIFC), and M. Abul Khair, a member of the National Assembly and Managing Director of PIFC, decided to record the speech. Actor Abul Khair helped them in this work. He was then the Director of Films under the Ministry of Information of Pakistan and an experienced moving camera expert. They were joined by N.H. Khandaker, an experienced technician. During Bangabandhu's speech, under the supervision of M. Abul Khair, technician N.H. Khandaker decided to record the audio of the speech under the stage. On the other hand, actor Abul Khair filmed the speech with a moving camera from one side of the stage. The audio-video was later gifted to Sheikh Mujibur Rahman on his birthday. M.A. Khair also donated the record to the Liberation War Museum in 1996 (Wahid, 2017 & Mahmud, 2020). UNESCO recognized the historic 7th March speech of Sheikh Mujibur Rahaman as part of the world's documentary heritage on October 30, 2017. The speech is preserved in the Memory of the World International Registrar ("UNESCO recognises Bangabandhu's 7th March Speech", 2017). The English historian Jacob F. Field also included and recognised Sheikh Mujibur Rahman's historic 7th March speech in his book *We shall fight on the beaches: The Speeches that Inspired History* (Chowdhury, 2014).

3. Methodology

As the study is a critical discourse analysis of the 7th March speech of Sheikh Mujibur Rahman, it has been studied in a qualitative way. By applying Fairclough's (2013) three dimensional approach, the speech is examined. First, the linguistic and formal properties of the speech were

studied. Next, the researcher interpreted its discourse process along with the context. Finally, the socio-political factors of speech and how the perspectives determined the discourse were also examined. The interdependence of the text, production process, and social background is also integrated to evaluate the speech as a discourse. The data have primarily been collected from the speech delivered by Sheikh Mujibur Rahman at Suhrawardy Udyan formerly known as Race Course Ground on March 7 in 1971. The speech has been analysed following Norman Fairclough's (2013) framework. Though it is written in *Bangladesh Liberation War: Records* (2009) (*বাংলাদেশের স্বাধীনতা যুদ্ধঃ দলিলপত্র*) that the speech lasted nineteen minutes, the videos available on internet do not run above ten minutes. The audio visual materials were distorted and not a single source kept the full speech. The source where the Bangla transcript of the speech has been preserved at most is *Banglapedia* (Rahman, 2015). Lately, a writ has been filed challenging the failure of the authorities to misrepresent the speech in the constitution in 2020. The Ministry of Information of Bangladesh formed a seven-member committee on October 6 of the same year to find the correct and complete speech ("৭ মার্চের প্রকৃত ভাষণের খোঁজে", 2020). More than hundreds of mistakes were found in the inclusion of 7th March speech in the fifth schedule of the constitution by the committee and the report was submitted to the High Court on June 16, 2022. Apart from that, the researcher took the labor intensive initiative to find out the remaining of the speech at its best observing one footage after another from different sources on the internet. In so doing, the researcher found some missing parts of the speech from an unverified channel on YouTube (Suman, 2013), transcribed, accommodated them with the existing transcript and then translated the required text in English for the study. Later, just before the final drafting, another transcript in English published in *Bangabandhu Sheikh Mujib's 7th March Speech: Epic of Politics* (Rahman et al., 2021) was included in the study. The source of the speech mentioned in the book is *Father of the Nation Bangabandhu Sheikh Mujibur Rahman Memorial Trust*. The writing of the paper had begun before Information and Communication Technological Division published twenty six eminent authors' analytical pieces on such a *magnum opus*. To collaborate with their contributions would not only be a privilege, but truly also an exertion of pressure as it seems now.

Emergent research design has been used in the study so that it could remain open-ended and "respond in a flexible way to new details" (Dörnyei, 37). The data have been analysed during the process of the

research. This study includes a wide range of data like speech, interviews, articles, newspaper articles and books. The research is also interpretive in nature. Its outcome is "ultimately the product of the researcher's subjective interpretation of the data" (Dörnyei, 38). Thus, both primary and secondary sources of data have been used to explore this political speech. To investigate the ideologies and power relations at situational contexts in history, the researcher inquired into the sources. The recording of the 7th March speech as a primary source was the object of the study. The other primary sources like news interviews also contributed to the study. The historical facts were studied from the secondary sources: *Bangladesh Liberation War: Records* (Rahman, 2009) (বাংলাদেশের স্বাধীনতা যুদ্ধঃ দলিলপত্র), *The Unfinished Memoirs* (Rahman, 2016) (অসমাপ্ত আত্মজীবনী), *The Outline of the History of Bangladesh* (Hossein, 2012) (বাংলাদেশের ইতিহাসের রূপরেখা), *A History of Bangladesh* (Schendel, 2009) and *Banglapedia* (Rahman, 2015), and *Bangabandhu Sheikh Mujib's 7th March Speech: Epic of Politics* (Rahman et al., 2021). The momentary data processing was time consuming by a single researcher and the sample sizes used in the investigation is very few in numbers. As the nature of the study is qualitative, no interaction has been made with any participants. Standardized instruments and statistical analytical techniques are not used in the research. Another weakness of the study is the researcher analyses the data solely which could be "influenced by the researcher's personal biases and idiosyncrasies" (Dörnyei, 41). The study is conducted after almost fifty years of the event. To interpret the situational contexts and the process of the discourse, the researchers had to rely on the history of the speech written by different authors. The data from all the sources were not found exactly the same. Because of overemphasizing and understating of information found in the sources, the retelling of the contexts might not meet expectations. The study should have encompassed all the significant personae who contributed to the independence of Bangladesh. It was realised that more facts and insights would have enriched the analysis.

4. Discussion and Analysis

The researcher tried to study the historical 7th March speech delivered by Sheikh Mujibur Rahman systematically in terms of Fairclough's (2013) three dimensional or 3D model through description, interpretation and explanation. The major focus was to evaluate the speech as a discourse by applying Fairclough's critical discourse analysis approach. Linguistic properties of the speech (description), its discourse process (interpretation)

and the socio-political factors (explanation) were expatiated by the adopted model. All the phases were integrated into the discussion and analysis of the speech.

4.1. Description

The 7th March speech of Sheikh Mujibur Rahman is transactional, interactional and performative in nature. He used both direct and indirect discourses to establish a connection with the audience. Sheikh Mujibur Rahman applied divergent prosodic and paralinguistic features during the delivery of the speech. His intonation, loudness, pitch, stresses, and body movements were distinct which made his style and speech unique and remarkable. Personal, both subject and object; possessives, reciprocal, relative, interrogative, demonstrative, and indefinite pronouns had been mentioned in the speech. He used all the antecedents of the pronouns in his deliverance. In the speech Sheikh Mujibur Rahman used a pronoun to refer to multiple antecedents. In particular, he must used the pronoun "I" (আমি) to express his personal (or collective in other contexts) emotion, but his use of "My" (আমার) also implied "Our" (আমাদের), as in "I clearly stated in the meeting, "the struggle, this time, is a struggle for *my* freedom/ emancipation. The struggle, this time, is a struggle for independence" (Suman, 2013). Though he used the exact utterance at the end of the extempore speech replacing the possessive "My" (আমার) with "Our" (আমাদের) expressing the feeling of equality. The pronoun "You" (তোমরা/আপনারা) had been used to refer to the audience which was mostly the people of East Pakistan and also to the authority of Pakistan. The pronoun "we" (আমাদের) was uttered to involve the people and the speaker himself (Alinezhad & Nemati, 2019), thus he was able to create a sense of equality and solidarity. He said, "We have tried hard, but it's a matter of sorrow that today the streets of Dhaka, Chottogram, Khulna, Rajshahi, Rangpur have been dyed with the blood of my brothers" (Suman, 2013). In the utterance, the exophoric reference "We" might have been referred to Awami League, East Pakistan activists, Sheikh Mujibur Rahman himself and/or to the people of East Pakistan in the sentence.

In the speech Sheikh Mujibur Rahman addressed both Bengalees and the Pakistanis as "brothers" but in different structures and contexts. He chose active expression with possessive adjective "my" for Pakistani and passive with possessive pronoun "mine" for Bengalees. Though the two utterances

"ভাইয়েরা আমার" (Brothers of mine) and "আপনারা আমার ভাই" (You are my brothers) (Suman, 2013) are conceptually similar, they have different affective meanings as in the former phrase closeness of relationship is more ensured. Sheikh Mujibur Rahman emotionally connected with the audience from the very beginning of the speech when he addressed the audience with "Brothers of mine" (ভাইয়েরা আমার). Instead of telling "my brothers", in the speech, he used the passive emphatic expression three times which could offer a sense of security and solace among the people of East Pakistan in the time of distress. By uttering "brothers", Sheikh Mujibur Rahman referred to the Bengalees who could have faith in him, on the other to the Pakistanis who were killing "brothers". The difference is more transparent when he politely warns Pakistanis, "I request you, you are my brothers. You do not destroy the country like hell" (Suman, 2013). Both polar and wh-questions are uttered by Sheikh Mujibur Rahman during the speech. While asking the rhetorical questions, he was not expecting direct answers either from the audience or from the Pakistani government whom he addressed at that very moment. The answers were implied in those questions, though the contexts, facts and replies were also provided before and after the questions in the speech. The questions asked by the orator contain his intentions or illocutionary forces. It means that some acts were being performed in speaking considering those intentions (Searle, 1976). The polar question like "Is it our fault?" (Suman, 2013) could have single or multiple illocutionary forces like warning, denying, dismissing and/or requesting. The questions (Suman, 2013 & Rahman, 2015) used in the speech and their illocutionary representations are given in *figure 1*:

Questions (বাংলা)	Questions (Translation English)	Illocutionary Acts	Illocutionary Forces
"দোষ কি আমাদের?"	"Is it our fault?"	It is not our fault/Do not blame us.	Denying accusations by West Pakistan and warning them not to do so.
"কী পেলাম আমরা?"	"What have we got?"	We have not got our rights/Give us what is ours.	Demanding the rights of East Pakistan

''কিসের বৈঠক বসবে, কার সঙ্গে বসবো?''	"What meeting will be held, with whom will I sit?"	We will not participate in the meeting.	Refusing to join both the conference and assembly
''যারা আমার মানুষের বুকের রক্ত নিয়েছে তাদের সঙ্গে বসবো?''	"Will I sit with those who have taken the blood from my people's chest?"	I will not sit with them who killed the people of East Pakistan.	Criticizing and protesting the unjust killing of the people
''তোমার আমার উপর বিশ্বাস আছে?''	"Do you have faith in me?"	You can have faith in me.	Pledging to the people of East Pakistan

The utterances in the 7th March speech are syntagmaticllay connected. Though there are a few natural heterogeneous performance variables, the spontaneity in the delivery outperforms them. The utterances made by Sheikh Mujibur Rahman are unique in nature and do not carry any syntactic ambiguity. The context of the utterances is literally evident that if the West Pakistan authority does not hand over the power to the elected representatives of Pakistan under the certain terms, the Bengal would fight for their emancipation and independence. The notion of the truth in utterances is also determined by the speaker (Sheikh Mujibur Rahman), the recipients (the people of East Pakistan & Pakistani Government), the time (1971), the place (Race Course Ground in East Pakistan), and the facts. The speech was not delivered for the purpose of giving information, but for motivation to action. The direct expressions had been adopted by Sheikh Mujibur Rahman to command the recipients to prepare for the resistance, as in "… be ready with everything you have. Remember! We have given blood, we will give more blood. We will liberate the people of this country by the will of the Almighty Allah" (Suman, 2013). He also used indirect discourse for the clarification of the context. For example: "He (Bhutto) said if members from West Pakistan came here, the assembly would be a slaughterhouse". Some forms of utterances and discourse markers used in the speech are listed below:

Figure 2 (Forms of Utterances):

Utterances (Bangla)	Utterances (Translated in English)	Nature
আজ দুঃখ ভারাক্রান্ত মন নিয়ে আপনাদের সামনে হাজির হয়েছি।	Today I have come before you with a heavy heart.	Clause: Affirmative & Simple (অস্তিবাচক ও সরল)
তিনি বললেন, (যে তিনি) দেশে শাসনতন্ত্র দেবেন, গণতন্ত্র দেবেন।	He said that he would give constitution and democracy in the country	Reported Speech: Complex (পরোক্ষ উক্তিঃ জটিল)
তিনি আমার কথা রাখলেন না।	He didn't keep my words	Clause: Negative & Simple (নেতিবাচক ও সরল)
আমি পরিস্কার মিটিং এ বলেছি যে এবারের সংগ্রাম আমার মুক্তির সংগ্রাম, এবারের সংগ্রাম স্বাধীনতার সংগ্রাম।	I said clearly in the meeting, (that) "Our struggle, this time, is a struggle for my freedom; Our struggle, this time, is a struggle for our independence."	Reporting Speech: Complex Compound (প্রত্যক্ষ উক্তিঃ জটিল যৌগিক)
আপনারা দেশকে একেবারে জাহান্নামের মত ধ্বংস করে দিয়েন না।	You do not destroy the country like hell.	Clause: Simple & Imperative (সরল ও অনুজ্ঞাসূচক)
আমি বলেছি তাদের কাছে এ কথা যে আপনারা কেন আপনাদের ভাইয়ের বুকে গুলি মারবেন।	I asked them this, (that) "Why would you shoot your brother in the chest?"	Reporting Speech: Complex (প্রত্যক্ষ উক্তিঃ জটিল)
দোষ দেওয়া হলো বাংলার মানুষকে, দোষ দেওয়া হলো আমাকে।	The people of Bangla were blamed, (and) I were blamed.	Clause: Compound & Passive (যৌগিক ও কর্মবাচ্য)
এ দেশের মানুষকে মুক্ত করে ছাড়ব, ইনশাল্লাহ্!	I will release the people of this country by the Will of Allah!	Clause: Simple & Exclamatory (সরল ও বিস্ময়সূচক)
ভাইয়েরা আমার	Brothers of mine	Phrase (সমাপিকা ক্রিয়াহীন শব্দসমষ্টি)
আমরা বাঙালিরা যখনই ক্ষমতায় যাবার চেষ্টা করেছি, যখনই এদেশের মালিক হবার চেষ্টা করেছি, তখনই তারা আমাদের উপর ঝাঁপিয়ে পড়েছেন।	Whenever we Bengalees have tried to go to power, (and) whenever we have tried to own this country, they have jumped on us.	Clause: Compound Complex (জটিল যৌগিক)

As the ideas in the 7th March speech are coherently connected, the establishment of coherence makes the text meaningful. Linguistic components like discourse markers or cohesive devices are deliberately used to form uniformity as well. They connect the speaker's previous ideas with the present and the future thoughts conversely in the speech. Sheikh Mujibur Rahman used কিন্তু (but), তারপরে (then), এমনকি (even), হঠাৎ (suddenly), প্রথম (first), আর (and), এর পূর্বে (before), এরপর (after), দ্বিতীয় (second), and so forth. Thus, the investigation into the linguistic and formal properties of the discourse would lead the reader to focus on the association between the text, interaction and social structures, and to understand the process of the discourse completely (Fairclough, 2013).

4.2. Interpretation and Explanation

Fairclough (2013) considered language as a form of social practice which is controlled by social structures. If the language is accordant with discourse, it serves as a means for discursive practices and social factors. It suggests that a discourse is composed of the text, interaction, and context. In the critical discourse analysis, interpretation brings out "processes of text production as well as text interpretation" (118) which requires interaction between the producer and the addressee. It does not only cover participants' interpretations of situational and intertextual contexts of the text through comparison, but also identifies the discourse type. On the other hand, explanation is meant by the association between interaction and social contexts by which a discourse is finally determined. Explanation of a text would require social determination or social structures within "a matrix of relations of power" at the contexts (135), ideologies, struggles, and so forth. Explanation considerably shows how a text can contribute to "sustaining existing power relations or transforming them" (138). On account of this, the above descriptive or linguistic analysis of the 7th March speech as a text would not accomplish the concept of a discourse, according to the model of Fairclough, unless it meets interpretation and explanation which are within and around the text. The 7th March speech presented by Sheikh Mujibur Rahman did not just happen on the spur of the moment. Just before the historical speech delivered in 1971 which is its situational context, Sheikh Mujibur Rahman had become a matured politician. Though he had acquired the ability to convince the mass by his spirited oration and credibility, the process of the production of the speech was not an easily accomplished task. Years of sufferings of millions of people of East Pakistan broadened his vision as a

leadership. It is evident that the political party, Awami League of East Pakistan succeeded to win the General Elections in 1970 under Sheikh Mujibur Rahman's lead. Being the spokesman of East Pakistan, he rose his voice for the rights of the fourth class employees of Dhaka University, guided the state language movement, proclaimed the six-point plan and so forth. As a political leader, he set goals and persuaded the supporters to prepare for sacrifices, even though the visionary goals were extremely dubious (Gärdenfors, 2002). He was successful as a leader to establish emotional connection with the mass. By his choice of words, unique prosodic and paralinguistic styles, he could easily appeal to audience's emotion.

The 7th March speech was so poignant and expressive that the people of East Pakistan favorably responded to his directives. The speech was "socially operative" because it was "embedded in social interaction" (Fairclough, 117). When with rising intonation he addressed, "Today the people of Bengal want freedom, the people of Bengal wish to live, and the people of Bengal want their rights. What wrong we did?" (Suman, 2013), as their leader he seemed to voice all the hopes and aspiration of Bengalees and demanded to know why he was not given the chance to rule the country despite his landslide victory in the general elections in 1970.

The attitude of the West Pakistani rulers had always been dominating towards the East Pakistan. The political emancipation was neither given nor offered to the East, even though they earned it rightfully. 1970 was the déjà vu of 1954, the first provincial general elections held in Pakistan after the partition in 1947. The cue for the interactional history (Fairclough, 2013) was given in the speech as an intertextual context. The four political parties of East Pakistan, Krishak Sramik Party guided by A. K. Fazlul Huq, Awami Muslim League by Maulana Abdul Hamid Khan Bhasani and Huseyn Shaheed Suhrawardy, Nezam-e-Islam and Ganatantri Dal, were united to contest the election with a manifesto comprising twenty one points program. United Front of East Pakistan secured an immense victory against the Muslim League of West Pakistan. The new provisional government, where A. K. Fazlul Huq became the chief minister, was formed, but it did not last long. The rights of the people of East Pakistan were again shattered after the central government dethroned the newly formed provisional government. In his *The Unfinished Memoirs*, Sheikh Mujibur Rahman mentions, a "huge conspiracy aimed at belittling the United Front government and showing it as incompetent in the eyes of the whole world" (272).

West Pakistan did not want to transfer power to the oppressed by any means as Sheikh Mujibur Rahman interacted with the audience, "whenever we Bengalees have attempted to ascend to the heights of power…they have swooped upon us" (Rahman et al., 17). The binary once set is hard to break. The West was privileged and it had been persecuting the East economically, culturally and ideologically. The unjust exercises of power by West Pakistani government and the sufferings of the East are reflected in the interaction of the discourse when Sheikh Mujibur Rahman traced back to the history specifying the moments in the past where East Pakistan endured negligence, discrepancies, and torments. It was not only the collective emotion, but the historical facts and events as resources of discourse wrapped in the 7th March speech. His rational approach was efficacious to persuade the target audience. He was distraught with grief while emphatically narrating the nation's tragic history of the bloodshed of Bengalees. After Pakistan was established in 1947, the inequality and power relation were apparent between West Pakistan and East Pakistan as Sheikh Mujibur Rahman made the reference to the history of twenty three years (twice used in the speech) of oppression at the very beginning of the speech to establish local coherence. The retelling of the historical events seem dynamic. Every utterance of the discourse is full of allusions and thus requires critical analysis.

While observing the social contexts of the historical allusions connected to the discourse it was observed that the intense collective feeling of suffering began when West Pakistan wanted to suppress the identity and rights of East Pakistan by making Urdu as the state language of the country in 1947. Even though the Bengalee speaking people were the majority in number, the authority in the West tried to uproot the East's homogeneity, culture and identity. A collective fear of losing Bangla and Bengal identity grew among the people of East Pakistan. For the recognition of Bangla as the state language, the students gathered defying section 144 on the 21st February in 1952. During the protest, a number of protesters were shot and killed by the police, but the martyrs' sacrifice did not go in vain. Bangla was approved as an official language by the government in 1956 and the language movement made a great impact on defining the national identity and on the after stimuli of independence (Rahman, 2016). Fairclough (2013) signifying the term explanation asserted that power relations determine discourse; "these relationships are themselves the outcome of struggles, and are established by those with power" (136). Ten years of military oppression since 1958 by Ayub Khan was also reminisced in the 7th March speech. During this period, economic

inequality, hegemonic power, killing of innocent lives of Bengalees and oppression in general increased immeasurably. The struggle of the oppressed was clearly revealed when West Pakistan not only dominated by using repressive force, but by applying "an inclusive power over the economy, over state apparatuses such as education, and the media" (Ashcroft, Griffiths & Tiffin, 107). Moreover, the people of Pakistan had witnessed "blood flow in the stream of time --- 1952, 1962, 1966, 1968, and 1969". A number of people of the East including political activists, political leaders, commoners, workers were killed and "subjected to systematic repression" ((Rahman et al., 38). For instance, having been rejected in Lahore in 1966, the struggle of Sheikh Mujibur Rahman and Six Point demands gathered immense popularity in East Pakistan. The program eventually became a movement and as the president of Awami League Sheikh Mujibur Rahman was thought to be a threat for the government and he got arrested on May 8, 1966. A strike called by Awami League was being observed for the release of Sheikh Mujibur Rahman and other politicians when thirteen people from Tejgaon, Tongi and Narayanganj were killed by the police and East Pakistan Rifles (Rashid, 2015). Hegemonic power would never be shared to the dominated East even when it was pledged. Consequently, Sheikh Mujibur Rahaman restated in the speech that when Ayub Khan was compelled to hand over the authority to Yahya Khan, the self-proclaimed constitution of 1962 was reestablished by Martial Law. The power relation, inequality, rivalry, hatred, and political unrest were the same as before, rather getting worse, but the commitment of founding constitution and democracy was never fulfilled.

The 7th March speech was delivered during the regime of Aga Mohammad Yahya Khan. After Yahya Khan had fixed the date of the National Assembly on the 3rd March, being the leader of the People's Party of West Pakistan, Bhutto abused power and refused to join the assembly; though he was defeated in the General Elections, he demanded power sharing. On the 1st March 1971, Pakistani President Yahya Khan abruptly postponed the National Assembly. All of a sudden, the people of the East Pakistan reacted to his autocratic repression. On the following day in Dhaka and on the 3rd March nationwide non-violent strikes were called by Sheikh Mujibur Rahman ("The 7 Days", 2020). This scenario was reflected in Sheikh Mujibur Rahman's speech on the 7th March as he said, "'You observe the strike peacefully … They were determined to continue the struggle peacefully" (Suman, 2013) Many of the unarmed protesters were shot and wounded by Pakistani troops. The people of East Pakistan had

"less access to the means by which" they might control "their own representation" and less access to the hegemonic power to break "the pattern of subordination" (Ashcroft, Griffiths & Tiffin, 199). To resolve the issue, Yahya called a round table conference inviting Sheikh Mujibur Rahman the majority leader of the country, but he rejected the proposal echoed in the 7th March speech that he could not join the assembly "by treading the blood of the martyrs" (Rahman, 2015). Another situational context in the interpretation cues the power relations among the leader and the activists of East Pakistan when the Manifesto of Independence was read by Swadhin Bangla Chatro Sangsad Parishad in the presence of Sheikh Mujibur Rahman in a rally program at Paltan Maidan fearing he would negotiate with Yahya Khan, but Sheikh Mujibur Rahman stayed with non-violent and non-cooperation movement with a clear vision. He said, "whether I am here or not, the liberation struggle of Bengalees should not stop. The blood of Bengalees cannot go in vain … come to the Race Course on 7th March, I shall announce the next course of action" ("The 7 Days", 2020 & "MARCH 3, 1971: Dhaka Turns a City of Processions", 2018).

For interpretation, answers or questions could come from different participants. It was written in *A History of Bangladesh*, that after the Assembly had been postponed, leftist politicians and activists of East Pakistan put pressure on Sheikh Mujibur Rahman to declare "independence right away" (125) on the 3rd March when the Assembly session was postponed. Schendel states that Sheikh Mujibur Raman "imagined" that he could be the "Prime Minister of united Pakistan" and that is why he was seeking "solution within the framework of Pakistan" (126). The ideas by Schendel seem too metaphysical and irrational when the participant uses the abstract verb "imagined" because on the 7th March Sheikh Mujibur Rahman clarified his position very well when he assured, "I do not want the position of Prime Minister. We want the rights of the people of this country." One can also interpret the assigning meanings to the utterances of the text. The propositions were clear with the "representations of the meanings" of the utterances (Fairclough, 120). The establishment of such local coherence does not connect the text or global coherence only; it also defies the whole system "articulating the aspirations of the people of Bengal" (Rahman et al., 102). Distortion of facts would lead any nation or a country to ignorance and to a untrue identity. Sheikh Mujibur Rahman's urge for ruling Pakistan should not capriciously be interrogated. If the authority had normally handed over the

power to the majority, the scenario would have been different and Bangladesh would not come to a reality. The situational and institutional contexts have to be realized that it was Bengalees right to claim the autonomy and to rule the whole country because they won a landslide victory in the general elections. Whether the subaltern would become the oppressor or not is another question, but such demand adopting a non-violent strategy was appropriate and wise when the lives of Bengalees were at stake. Any abrupt decision could have resulted in negative consequences worse than the early period of the Liberation War, despite what is the worst that could happen when "3 Million" ("Bangladesh … Charged", 2012) people were killed, "30 million displaced" from home, "10 million" fled to India, and "250,000" women raped in a province during the Liberation War (Totten & Bartrop, 2008, 34)?

Sheikh Mujibur Rahman could be interested to join the assembly or negotiate with President Yahya Khan, but in the end, as he told that "by treading the blood of the martyrs" (Rahman, 2015) he did not want to. In consequence, he wisely put forward the conditions before Pakistani government and separately set the course of the actions for the rights of the people. He must have known or predicted the outcome of the context as he instantaneously forewarned, "if a single shot is fired, and if my people are killed, my request to you that build forts in every house. You have to deal with the enemy with everything you have, and with everything in your life/by your life, if I can't give orders, you will stop (everything)" (Rahman, 2015). For a while the oppressors had been pressurized into "less direct ways of exercising and reproducing their power" (Fairclough, 2013, p. 60). Sheikh Mujibur Rahman reasonably put forward five demands setting the conditions for joining the assembly, even though the assembly was again called on 25th March by Yahya Khan. The demands acted with performative and illocutionary force which carried urgency of the actions are given below:

1. Immediate withdrawal of martial law;
2. Immediate retreat of all military personnel to their barracks;
3. Investigation into the killing of people in East Pakistan;
4. Immediate transfer of power to the elected representatives of the people
5. Termination of the military rule in the country (later added in the speech)

In the name of religion, the rulers of Pakistan carried out the oppression for twenty three years on the people of East Pakistan. The suffering which the government brought to the people is inexpressible. Realizing the freedom would cost more as the lives were being killed aimlessly, Sheikh Mujibur Rahman warned that the West could not always suppress and torture the seventy million people any longer. Since the West declined to transfer power legitimately, the demands were accelerated in Sheikh Mujibur's voice: the freedom of the people, their lives' security, rights and the rightful power. The unity called by Sheikh Mujibur Rahman became the strength of the people. The voluntary resistance instantaneously began after the people of East Pakistan were distinctly instructed to continue Non Cooperative Movement.

West Pakistan ruled the eastern part by military force in an unjust way. During the non-cooperative movement, many protesters and civilians were shot. In a report of the government, 172 people were killed and 368 were injured within six days before the 7th March (Hossain & Hossain, 2014). On the one hand, the rights of East Pakistanis were being deprived, and on the other hand, their lives and resources were being lost. As the movement was non-violent, Sheikh Mujibur Rahman did not want to avenge the dead because he knew in doing so he would lose more innocent lives. Rather, he cast an illocutionary force by warning them: "you cannot suppress seventy million people. When we have learnt to die, no one can stop us" (Rahman, 2015). He also gave directives to his followers or addressees to secure lives of all, a "Hindu or a Muslim, a Bengali or a Non Bengali" (Rahman et al., 19) and to control media so that they would not manipulate the real intention of the movement. Sheikh Mujibur Rahman knew media producers had the ability to "exercise power over consumers" (Fairclough, 42). He felt that the mass media had "to articulate the aspirations" (Rahman et al., 134) of the Bengalee people and that the Pakistani government would do everything in "their power to prevent people from listening to his speech" (138).

The interactional use of language by a politician with his/her relatives does not count as a political discourse, but an interactive speech before the mass of the population could carry a significant political effect (van Dijk, 2002). Surely, the speech can be considered as a political discourse as the political leader Sheikh Mujibur Rahman by the speech succeeded to guide the people of East Pakistan to prepare for resistance against the upcoming oppression. The ending lines stimulated the one million people the audience and then the whole nation. It was the thing they wanted to hear

from their leader most eagerly. Choosing rights of people over joining the assembly was like losing the battle but winning the war. The historical speech ended up with a resolution: "Remember, when we have given blood, we will give more. We will liberate the people of this country by the will of Allah. Our struggle, this time, is the struggle for our emancipation. Our struggle, this time, is the struggle for independence" (Rahman, 2015). Both মুক্তি and স্বাধীনতা have their denotational values, but how they are meant by Sheikh Mujibur Rahman should be the matter of discussion. It might be the freedom of everything from all the constraints; the cultural, economical and ideological emancipation of people within a territory or the territorial independence with sovereignty. Sheikh Mujibur Rahman must have inferred the future of the nation and thus took all the possibilities in those terms adopting strategies. The people of East Pakistan completely consented to the civil disobedience movement called by Sheikh Mujibur Rahman. All classes of people responded to his call and followed his directives till the black night of 25 March. As the subaltern or oppressed could not process an immediate step or action, the directives guided them to break the unlawful restraint of the oppression. The peaceful movement resulted in the war of liberation and Bangladesh liberated after nine months of bloody struggle on 16 December in 1971. It is truly stated that language is not "merely a reproducing instrument for voicing the ideas but rather is itself the shaper of ideas" (Whorf, 1940; cited in Hudson, 2001). The 7th March speech was not an oration only, it shaped the psyche of the seventy million people and thus set their path to freedom. The entire aftermath of the 7th March speech along with the events and sacrifices before the victory against Pakistan is not the variable of the study, but more detailed facts and insights would have broadened the analysis.

5. Conclusion

To evaluate a political discourse is not what it may seem because the interpretations of a discourse by discourse analysts do not completely determine the reality. In most of the cases, discourses are controlled and redistributed (Foucault, 1978, cited in Pitsoe & Letseka, 2013), thus they can be challenged by another channel or facts at any time. Sometimes power rules over the real events and tries to reshape the facts instead. This inclination or circumstances could lead any one to suppress or reject the history. The 7th March speech addressed by Sheikh Mujibur Rahman was absolutely political and it is only recognised when the political party

Awami League is in the government. The speech which inspired the Bengalee people to fight for their rights and freedom was not otherwise acknowledged after Sheikh Mujibur Rahman and his family had been assassinated most brutally. At the same time, the political hatred among the political parties has been distorting the history by removing facts from the nation and denying each other's contribution to the nation or to the country. The recognition of the 7th March speech by UNESCO in 2017 also bespeaks the fact that after 46 years of the speech delivered, it was registered when the ruling party was Awami League. History does not sit on the fence. Even if the historical speech motivated the people of East Pakistan to achieve their independence, the oration and the orator were eventually forgotten at some points in time after 1975. A political figure is only spirited when his or her party is in the authority or power. Whether Sheikh Mujibur Rahman will ideologically be alive, or he will be put aside in the pages of the history books forbidden by another political power might depend on how political parties or overall government would take initiatives to preserve the history and publish facts rather than propagating political hatred.

In the struggle of twenty three years after 1947 partition of the subcontinent, Sheikh Mujibur Rahman was always found by the side of Bengalee people who had been being oppressed for the years by Pakistani government. His logical propositions, sense of equality and love for the people were reflected in his 7th March speech. The linguistic and formal properties of the text, situational contexts, and social relations were analyzed in an integrated way. While examining the linguistic properties of the speech (description), the researcher found the way Sheikh Mujibur Rahman interacted with the people was compelling. The individuality of his diction, style and utterances made his speech unique and eloquent. The directives with rising and falling intonation were full of illocutionary forces which prompted the necessary actions. How the discourse or speech was processed was also interpreted in the study. The historical allusions in the speech contributed to the interpretation of the situational and intertextual contexts. The utterances addressed to the recipients and the years in the past were also explicated in terms of historical events. The researcher also tried to evaluate and substantiate those events. While retelling the history of twenty years of East Pakistan before the independence, its socio-political factors like asymmetric power relation between East and West Pakistan, economic and social inequality, law, oppression, solidarity among the people of East Pakistan, protests, ideologies, struggle for emancipation and freedom came cross in the study.

In its conclusion, it may be noted that the 7ᵗʰ March speech is the result of "social practice determined by social structures" (Fairclough, 2013, 14), but later it becomes one of the important determinants of independence. It is indisputable that the sense of Bengal identity and belonging is truly manifested in the historic speech, Sheikh Mujibur Rahman's political ideologies embodied in the speech could still strengthen the political practices in the country, but the denial of the contribution of the 7th March speech would cause the country or nation a great loss in its history and identity.

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A Study on the Curriculum and Teaching Materials of English Language at Dakhil Level in Aliya Madrasas

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Abstract

Evaluation of syllabus and teaching materials is a regular topic in the area of linguistic studies. However, very few studies have been conducted on the curriculum of English language at Dakhil level in Aliya madrasas in Bangladesh. The reports from BANBEIS and World Bank (2015) have revealed that the English language proficiency of the students of Aliya madrasa are below the standard. Therefore, this study is an attempt to observe the English language curriculum along with the teaching and learning approaches applied at Dakhil level in Aliya madrasas. The objective of this study is to evaluate the appropriateness of teaching materials according to the English curriculum for Dakhil level, and to examine what attitudes the relevant students and teachers have towards the English curriculum and textbook. A total of 600 students studying in 30 Aliya madrasas and 30 teachers currently teaching at Dakhil level (equivalent to SSC level) were chosen as participants in this mixed-method study. For collecting information on the latest theoretical development in this field, the secondary sources of data have been used. The textbook checklist and questionnaires for the students and teachers have been used for collecting primary data. The study has found mismatch between the curriculum objectives and assessment system. Recommendations have been made for curriculum and textbook revision and further studies in this area.

Keywords: English Curriculum, English Textbook, Evaluation, Dakhil Level

1. Introduction

Aliya madrasa is an education sector of Bangladesh that provides both religious and secular education. Students study Islamic education along with secular subjects such as English, mathematics, pure sciences, and social sciences. This education is funded and overseen by the government through a national board of religious education. Bengali is the medium of

instruction in this stream with Arabic and English languages which are being taught as compulsory subjects. This sector is also large, catering to over 3.83 million students including its Ebtedayee (primary) level. Madrasa students are required to complete five consecutive levels such as Ebtedayee (Primary), Dakhil (SSC), Alim (HSC), Fazil (Tertiary) and Kamil (Masters) to obtain complete educational certificates.

In Bangladesh, English language education was introduced in madrasa education in 1971(Hoque, 2008). At the beginning, unlike English language teaching in Bangla medium institutions where all four skills of English language were emphasized though disproportionately, emphasis was mainly given on teaching reading and writing skills in English language to the students of Aliya Madrasas. In 2012, with the last modification of the book *English for Today* communicative language teaching and learning was introduced at the secondary level of general education system as well as in Aliya madrasas. The new *English for Today* series was prescribed by the National Curriculum and Textbook Board (NCTB), to promote communicative language teaching method known as CLT. Saha (2012) has stated "the textbook is developed to help the students attain competency in all four language skills, i.e., reading, writing, listening and speaking." (EFT, 2018) However, due to inadequate or no training and knowledge of the new approach, the teachers at Dakhil level could not implement the communicative teaching effectively in the classrooms. This book has got lesson plans and learning outcomes explained and attached with each lesson. The teachers at Dakhil level are expected to teach each lesson following the prescribed lesson plan and teaching pattern.

As the communicative language teaching approach is more student oriented, it is believed to be the most motivating approach in language teaching. Oxford (1990) states, "CLT deliberately emphasizes self-direction for the learners" (171). Therefore, in the present research, the researcher made a survey on the teachers who are currently teaching English language at Dakhil level to identify what type of materials they are using, to what extent they are implementing CLT techniques to teach English language and to what extent students of Aliya madrasas are getting benefit from the new teaching style.

2. Problem Statement

In Bangladesh, the students studying in madrasas are struggling to get good jobs because of their poor proficiency in English language. Recently,

in the English language syllabus of Dakhil level 200 marks were added allotting 100 marks for paper I and 100 marks for paper II. However, the failing grades increased significantly in the madrasas after these additional 200 marks in English language. Since the government has already taken a strong step to recognize the highest madrasa degrees as equivalent to any master's degree, it is high time that we should take initiative to motivate the students to learn English so that they can compete and cope up with their peers both nationally and globally. If we overlook this problem, these graduates after completion of their education will become jobless. Apart from modification of their syllabus of English Language we need to identify how effectively CLT is being implemented in the classrooms. It would help us to identify the effective approach to teach English language to them so that they can get jobs abroad and compete with the normal masters' degree holders.

3. Rationale of the study

Madrasa Education is gradually getting more importance after the announcement by the Prime Minister to recognize them as standard graduates. Therefore, the study of English language should be given more priority in Madrasa education. Without having adequate proficiency in English language, Madrasa students will struggle to be connected to the national and global world. While surveying for the research, it was observed that, madrasa students lead an ascetic and disciplined life and have superb memorizing capability because of memorizing the Quranic verses from early childhood. This capacity of memorizing can be better utilized as a learning strategy and can be of great help in teaching formulaic language or situational English. Due to lack of adequate knowledge about madrasa students, they are often misunderstood and their talents are ignored, as a result appropriate teaching-learning strategies are not adopted. Therefore, the researcher believes this study will help the teachers, stakeholders and policy makers to figure out the solutions for improving English language teaching in Aliya madrasas.

Research Questions

The research questions of the study are as follows:

a. How appropriately is the English curriculum for the Dakhil level students designed by NCTB for Aliya madrasas?

b. What attitudes do the Dakhil level students and teachers have towards the relevant English textbook, *English for Today*?

4. Literature Review

The literature review covers the recent studies on the curriculum of communicative language teaching and its appropriateness in language learning. It also discusses the research on choosing appropriate materials for English language learning and syllabus evaluation for effective second language acquisition. To define curriculum Kelly (2004) says that it is very important to point out an umbrella term which encloses approach, technique, method, syllabus, exercise and activity within itself. Curriculum means much more than subjects to be transmitted, taught or delivered. Curriculum provides information on the objectives of our teaching, on the probable effects of the information transmission and on the outcomes. (p.1). As the Dakhil English syllabus was designed to practice communicative language teaching, it strongly recommended student centered approach to teaching English language (Hoque, 2008)

The curriculum development takes the shape from the construction of philosophy, theory and practicality. The sources of a curriculum are the science, knowledge, moral doctrine, society and the learner (Ornstein & Hunkins, 2009). Similarly Richards (1990) and Brown (1995) suggested that needs analysis, objectives, testing, materials, teaching and evaluation are the basic components of curriculum design. The Dakhil syllabus of English language designed by NCTB included *English for Today* to promote communicative language teaching but could not come up with positive results due to inexperienced teaching staff. (Hoque, 2008)
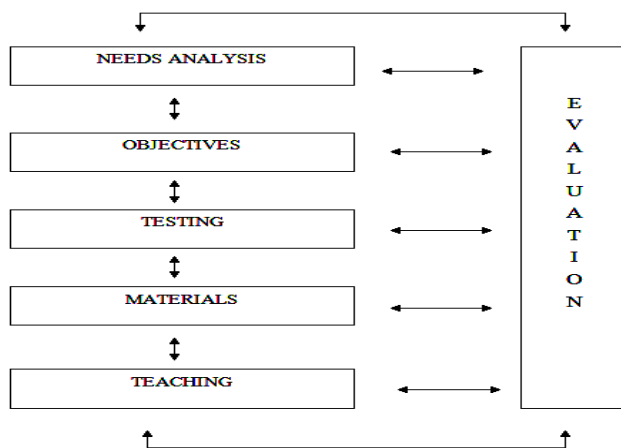
(Brown, 1995, p. 20)

Figure 1: Systematic Approach to Designing a Language Curriculum

The above figure explains that the highest priority should be given to the needs of the learners before designing any curriculum. Needs analysis includes the structure of language to be taught, selection of the inputs, deciding the content, selecting the language needs and designing the assessment system (Richards, 1990). However, no research was ever conducted on the needs of Dakhil students in Aliya madrasas. In the present study, the researcher endeavored to figure out

The proper alignment of the needs, objectives and learning outcome of the English curriculum of Dakhil syllabus in order to identify how appropriately the CLT (Communicative Language teaching) syllabus is being implemented in Aliya madrasas. Taking the North American context in consideration, Savignon (2006) has noted that through CLT activities students engage in real communication that ultimately develop their competence level. Therefore, CLT is still considered the most motivating method as it is a student-centered approach to language teaching and learning. (Dorney, 2006). Referring to Chinese secondary school students, Cheng's (2015) action research observed that most of the students developed communicative competence after the teaching strategies were modified and that reduced students' anxiety in language classes. (705-717). However, CLT approach did not prove to be very effective in Bangladesh according to the studies conducted on Bangladeshi educational institutions. Islam's (2016) study to identify the cause of the failure of the effectiveness of CLT at primary level in Bangladesh has noted that CLT is not effective at primary level in Bangladesh because teachers failed to implement it properly due to improper teaching methods, classroom practice, teachers and students' perception about CLT examination system. Alam (2016) has studied to identify the challenges stakeholders face to implement CLT in Bangladesh and found lack of training, poor socioeconomic condition, large class size and mismatch between curriculum and assessment are the main reasons behind the failure of CLT in Bangladesh. Alam's research also identified the lack of visual aids to teach English language using CLT method in the classrooms.

Hossain's (2012) very comprehensive study on the SSC syllabus of English language has found that it includes items that may help the students practice reading and writing but not achieve communicative competence. He has pointed out some possible causes behind this inability of students to communicate in English such as the untrained teachers, uninteresting contents of English book, "students' poor performance,

lacking in the teacher-student interaction and above all, some lacking in the syllabus" (15). Another comprehensive study by Hoque (2008) on the students at Alim level in Bangladesh has focused mainly on the standard of teaching and learning English in Bangladeshi Madrasas. He has identified major drawbacks in teaching the four skills e.g., reading, writing, listening and speaking. Similar to Hossain's (2012) the researcher has pointed out that "major problems lie with textbook materials, uninteresting lessons, methods of teaching, poor quality of teachers, lack of classroom facilities and teaching aids etc." Hoque's research concentrated only on the problems of curriculum in madrasa at Alim (Higher Secondary) level.

The present research also focuses on the appropriate teaching material for CLT activities. "Material comprises everything which can be utilized to assist the teaching-learning of a language program. They can be visual, linguistic, kinesthetic or auditory and they can be printed, through live display or performance, or on CD, cassette, the internet or DVD, despite the modern outburst of electronic objects as most foreign language learning materials are yet in print as books. They can be experiential, instructional, exploratory or elucidative". (Tomlinson, 2001, 80-101).

5. Methodology

The research was initiated in 2021 and multiple triangulation approaches were applied to collect data including questionnaire survey, face-to-face interview and textbook evaluation checklist adopted and modified by following the checklist of Vahid, N and Jay.M (2016) from university of Putra, Malaysia. This study has involved subjects of two categories: Aliya Madrasa teachers currently teaching *English for Today* at the Dakhil level and students reading this book as their textbook. A survey questionnaire was used for teachers. The questionnaire had separate sections. The first section included questions regarding demographic information of the teachers, their educational background, duration of class time etc. The main section included questions based on the appropriateness of the textbook *English for Today*, relevancy of the syllabus at Dakhil Level, communicative activities practiced in classrooms etc. The students were interviewed for their opinion about the teaching methods and appropriateness of the textbook, *English for Today*. Interview sessions with madrasa students and teachers were recorded and later transcribed by the researcher. Through the questionnaire, the researcher has endeavored to find out to what extent the teachers are using communicative language

teaching methods to teach *English for Today* and how much the students are getting benefit from the new method.

5.1 Population and sampling

The sample of the research included 30 teachers currently teaching *English for Today* at Dakhil level in the Aliya Madrasas and 600 Dakhil (Class IX and Class X) students from those madrasas. In order to make the sampling representative, the researcher selected Aliya madrasas from Dhaka, Chittagong, Khulna, Rajshahi and Sylhet, which abound with many madrasas.

Number of Aliya Madrasa students from each district

	Frequency	Percent
Dhaka	225	37.5
Chittagong	138	23.0
Sylhet	79	13.2
Rajshahi	81	13.5
Khulna	77	12.8
Total	600	100.0

Total Teachers as participants for the survey

Total No. of Teachers in the survey

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	15	50.0	50.0	50.0
	Female	15	50.0	50.0	100.0
	Total	30	100.0	100.0	

5.2 Data collection procedure

While the researcher personally collected data from each madrasa, the ethical issues like assured anonymity and confidentiality of the participants were explained. For the interviews, the researcher used a few lead-in structured questions and some unstructured questions. There were

survey questionnaire for teachers and students. At Dakhil level, NCTB prescribed the Textbook *English for Today* to be taught using the communicative language teaching methods. The SSC and the HSC level students studying in Bangla medium institutions also study exactly the same textbook *English for Today* recommended by NCTB. Following are the lessons of English for Today recommended for Dakhil level.

Units and Lessons of English for Today	
Units	Name of Lessons
Unit 1	Good Citizens
Unit 2	Pastimes
Unit 3	Events and Festivals
Unit 4	Are we Aware
Unit 5	Nature and Environment
Unit 6	Our Neighbors
Unit 7	People who stand out
Unit 8	World Heritage
Unit 9	Unconventional jobs
Unit 10	Dreams
Unit 11	Renewable Energy
Unit 12	Roots
Unit 13	Media and modes of E-communication
Unit 14	Pleasure and Purpose

The above table shows the name of the lessons of *English for Today*. This textbook was last reviewed and updated in 2012 but the topics were never changed. The researcher thinks it is high time that the editors should add new topics that are more related to the present contexts, for example, Covid-19; pandemic related topics or vaccinations should be included in the units. The Dakhil syllabus contains 14 units comprising 69 lessons. These lessons include grammar activities like completing sentences, practicing wh- questions, exercises on vocabulary, gap –filling exercises with verbs, prepositions, adjectives etc. Unit one of *English for Today*

contains a lesson titled "Good Citizens", where the learning outcomes are, to be able to narrate incidents, to participate in discussions, listen to and understand others use of English language. There are also picture descriptions, story-telling and writing activities. 'Unit 1' also includes an audio attached with the textbook to be played in the classroom and students are supposed to choose the best answers from the options given in the textbook after listening to the audio clip. There are clear instructions before each lesson on how to teach the book and how to make the class interactive to practice English language. Focusing on communicative activities, the textbook *English for Today* is quite standard and is suitable for grade IX and IX at Dakhil level as it has incorporated many interactive activities to develop communicative competence of the students.

5.3 Assessment system of the curriculum

The assessment system of the curriculum shows that after the completion of two academic years in Grade X, education boards conduct a public examination where the students face two examinations for English as compulsory subjects in paper I and paper II. These two papers include test on reading, writing, speaking and listening skills of the students. However, the survey results on Madrasa teachers revealed that the speaking and listening skills are rarely practiced in the classes, as the marks allotted for these skills are only 20 out of 100. Due to the unequal marks distribution, the students can also achieve good grades by skipping these two skills. Consequently, the teachers do not encourage the students to practice these skills as the main goal of the students is to get pass marks in English language courses. Therefore, the current examination and assessment system need to be re-designed and 25 marks need to be allotted for each language skill to promote and ensure development in learning English language.

The present distribution of marks of paper I and II for the examination are given below:

Table : 1

Distribution of Marks for Paper I, Code: 136 [Dakhil Syllabus 2022]		
Test Skills	Marks	Test Items
Reading	40	Seen Passage 1: MCQ, Answering open and close ended questions, Seen Passage 2: Gap Filling without clues Unseen Passage : Information Transfer, Summarizing, matching
Writing	40	Writing paragraph answering questions, Completing a story, Writing E-mails, Writing Dialogue
Speaking	10	Class performance, debate, pair and group activities
Listening	10	Listening for specific information, activities to initiate meaningful communication
Total	100	

5.4 Summary of the teachers' survey

Majority teachers think the syllabus to be quite difficult for the students considering their level of proficiency. The analysis reveals, 56.67% teachers said that the syllabus is "a little" relevant regarding the learning outcome of the course. In the interviews also, the teachers said that Dakhil students struggle to study *English for Today* as they do not understand many vocabularies because they have not studied standard English language books in their primary level. However, teachers are quite positive about the topic of the lessons of *English for Today*, as 56.67% said the lessons are "very much" common topic of the daily lives of the students but the activities are difficult for the students to complete. 76% teachers said, the syllabus failed to create a communicative atmosphere in the classroom, while 70% teachers said the textbook was not interesting towards the students as the students are unwilling to participate in the communicative activities. 83.25% teachers said the textbook does not attract the students while 73.67% teachers said the texts are not suitable regarding the linguistic level of the students. During the interviews, the teachers claimed that the main obstacle to teach English using CLT methods in the large class size. Besides the teachers are always under pressure to complete their syllabus. In Aliya madrasas, at Dakhil level, the

language teachers are very much aware of and serious about teaching and writing the rules of grammar in classes. The students memorize those rules and then use them in the sentences. They follow a deductive approach to teach grammar and language in Aliya madrassas. Dakhil level in Aliya madrasas teaches only reading and writing skills. Few male and female teachers teach speaking skills in the class. During the interview majority of the teachers opined that only twenty marks are allotted for the listening and speaking skills in the syllabus, so they are considered not so important. Students can also achieve good grades skipping that 20 marks.

5.5 Availability and use of teaching aids

As the prescribed textbook *English for Today* included interactive listening and speaking activities in the lesson plan that require audiovisual facilities, the researcher tried to find out how much the teachers use visual aids in English language classrooms at Dakhil level in Aliya madrasas.

Table 4: Availability of teaching aid at madrasas

Sl. No.	Teaching -Aids	Yes	No
1.	Black-board/ White-board	100%	0%
2.	Over-head Projector	10%	90%
3.	PPT/Slideshow/Video facilities	5%	95%
4.	Audio facilities	10%	90%

Majority of Aliya madrasa teachers use only blackboards or white boards as teaching aids, and the reason for not using other modern teaching aids is non-availability of the same and that has been reflected in the table above. The high standard madrasas provide both video and audio facilities in classrooms but the curious paradox is that, those are rarely utilized due to the teachers' lack of training needed for the use.

5.6 Application of communicative teaching strategies

Communicative language teaching is successfully realized through certain language teaching activities such as role play, pair work, discussions and by creating opportunities for students to practice the target language. The prescribed textbook *English for Today* at Dakhil level includes lessons with numerous pair and group work activities. After each lesson, clear instructions and audio files are provided for the teachers, so that they

make the students involved in discussions or pair works and arrange for listening activities. The table below shows how poorly the classes are managed in the name of CLT. Lack of proper training of the teachers has been attributed for this teaching scenario.

Table 5: Communicative Language Teaching Activities practiced in the class
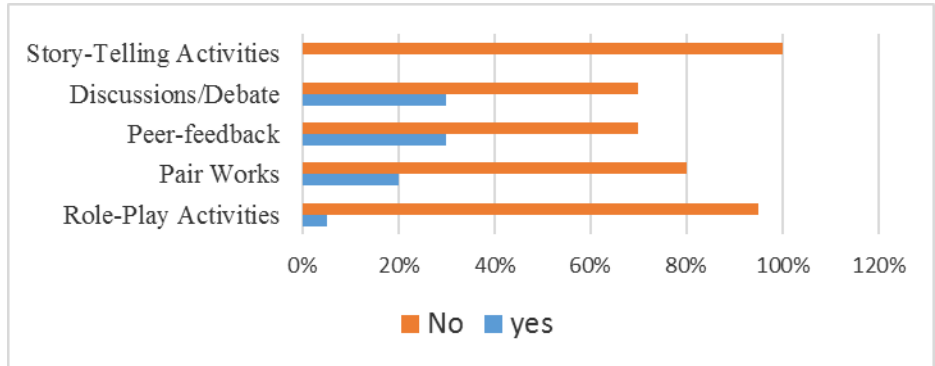
Graph 1

The study has found low or no participation of the students in the class, and reasonably the result, as the graphs below explain, is that the classes become teachers centered. If the teacher talking time (TTT) is fairly longer than the students', CLT classes are likely to fail.
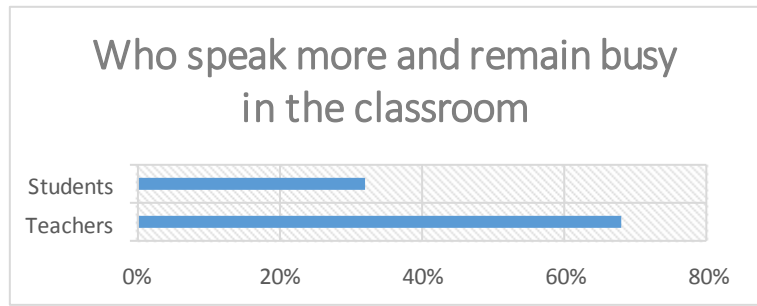
Graph 2
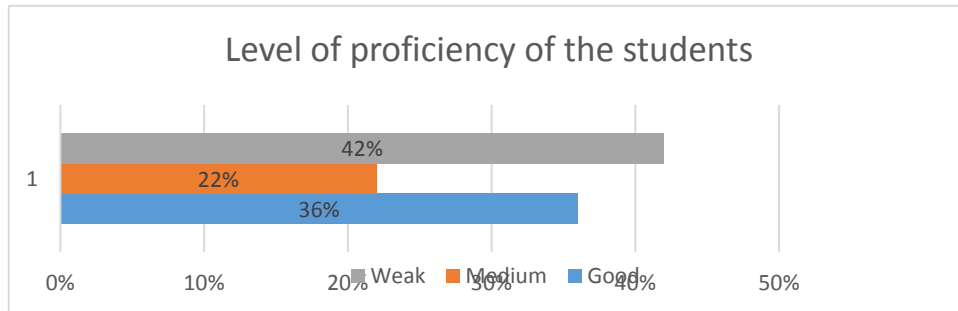
Graph 3

The teachers' own assessment of their students' proficiency level in English, as reflected in the above bar charts, represents a poor realization of the learning outcome.

5.7 Students' survey and focus group discussion

The data from students' survey and focus group discussions revealed a grim picture. Whilst the teachers claimed that they practice listening and speaking skills, though in a limited way, the students opined, "we never practice speaking and listening in the classrooms. Our lessons are reading and writing based. We always study fixed topics for paragraph writing and essays." The students think that the textbook is interesting but they do not practice any interactive activities inside classrooms. They never participate in any debate or conversation sessions. The audio clips or video tapes are never provided along with the textbook and the teachers do not take initiative to play those in the classrooms. The most alarming discovery was to know that the students memorize fixed responses of the lessons given in *English for Today* from various guidebooks that are available in the markets and they receive quite good grades by writing those answers in their exams. The students are asked to take notes of different grammar rules from the teachers and memorize those rules to understand grammar.

6. Analysis of Evaluation Checklist of *English for Today*

Vahid, N and Jay, M (2015) noted that "textbooks are evaluated for two main reasons: selection or adaptation". To select the most appropriate textbook, National curriculum and textbook board need to evaluate all textbooks and get them reviewed regularly. The evaluation was conducted under ten different criteria and shows that the contents are quite standard though it requires regular reviews by experts to keep the lessons updated

and NCTB must ensure that teachers are qualified enough to teach the book properly. The objective for each lesson of *English for Today* is clear. There are also lesson plans with each unit to help the teachers make their own lesson schedule. After each lesson there are clear learning outcomes explained in the textbook e.g., "after studying this unit the students will be able to narrate incidents, discuss in pairs" etc. In each lesson of the textbook, there are numerous pair discussions, role-play, dialogue practice and listening activities. The lessons are intended to incorporate all four-language skills to be practiced properly in the class. The instructions are clear and written in simple words so that the students can easily understand them. It is suitable for class IX and Class X students based on their linguistic level. The lessons are related to Bangladeshi lifestyle and culture but they are not updated. New topics related to the present context should be included in the units. The activities are all student centered and the teachers can act simply as an instructor. There are numerous pictures and diagrams in each lesson along with video and audio tapes. However, the printed textbooks are black and white because of low cost of printing. The lessons are very interesting and related to real life. However, students at Dakhil level fail to enjoy these activities because of traditional teaching methods and inexperienced teachers. The lessons do not promote grammar teaching. It has provided all supports for a teacher to ensure communicative language teaching in the classroom.

7. Discussion

The results of the data show that majority of teachers at Dakhil level are not qualified enough to teach English language effectively as per the demands of the curriculum. Only reading and writing skills are practiced in the classrooms at Dakhil level. The lessons of the textbook *English for Today* are taught in the classes using the very traditional language teaching method (GTM) i.e. Grammar translation Method. Brumfit (2000) stated that a learner might have "million English vocabularies but will fail to speak if he does not know how to put the words together". Therefore, only making the students memorize fixed responses and grammar rules does not help them achieve communicative competence. The aim of students for learning English language is still limited to getting pass marks or good grades. The expected learning outcomes are not being achieved through the present teaching styles in Aliya madrasas. Therefore, the teachers do not take the responsibility to teach English language for practical purposes. There are inproportionate marks distribution in Dakhil syllabus for speaking and listening skills as only twenty marks are allotted

for listening and speaking skills. The teachers are unaware of the role-play or conversational activities and Aliya madrasas do not provide advanced visual aids for teaching in classrooms; therefore teachers do not get enough logistic support to practice communicative skills or to make the classes interesting. The students do not get any motivation to practice English language skills , and so to communicate in English.

8. Recommendations

Recommendation for revision of the curriculum has been made on the basis of the valuable findings of the study. There are guidelines for the writers of the textbook for English paper II but there is no textbook or suggested book for English paper II. The curriculum does not provide sample question with answer for paper I and paper II which leads the students follow guide books or help books. During the revision of the curriculum, steps should also be taken to ensure alignment between the learning outcomes and the assessment system of the curriculum. Translation and retranslation are helpful in learning a foreign language which should be taken into consideration while revising the textbook. For developing listening skill, teaching aids should be added to the list of the teaching-learning materials. Moreover, students should be given opportunities to practice correction in the incorrect sentences and at the same time it should be taken as an examination item because most of the students cannot write English correctly. The teachers must provide guidelines to the students as to how they can use the language for practical purposes, and for that, teachers should have training on teaching methods and approaches. Madrasa governing body should recruit qualified teachers with English language and literature backgrounds. Teaching aids and equipments should be available in all madrasa campuses. Madrasa education board must ensure that all campuses provide the same facilities for teaching and learning. Audio cassettes, computer labs, video facility, multimedia, over-head projector, television, colorful posters and pictures need to be available along with black and white board. Equal marks need to be allotted in all four skills of language learning in the syllabus for Dakhil level. The Dakhil textbook *English for Today* should have colorful illustrations to make it attractive and motivating to students. Madrasa boards must arrange for teachers training workshops for improving English language teaching in Aliya madrasas. To reduce a large number of students in each class, Dakhil classes should be divided into several sections. The textbook of Dakhil level is quite standard considering the proficiency level of the students; however, IQAC needs to ensure that the

lessons are practiced with communicative language teaching method so that the learning outcome is properly achieved.

9. Conclusion

Aliya Madrasas were created to upgrade madrasa learners' education and bring them towards the mainstream so that there remains no discrimination between Madrasa learners and other secular institutions' learners, but at present this system is at its deathbed. NCTB has introduced new methods of communicative language teaching and a very effective textbook *English for Today* in the curriculum but without qualified teaching faculties, CLT is not being implemented properly in these institutions. The present English language teaching and learning strategies at Dakhil level do not prove to be effective in teaching all four skills of a second language. Therefore, the researcher strongly believes that the findings and recommendations of this study will help the students, teachers and stakeholders find suitable ways to improve English language education in Aliya madrasas in Bangladesh.

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Appendix 1   [Teachers' survey questionnaire]

Respondent's Background Information

Name of the respondent:

……………………………………………………………

Educational Background:

……………………………………………………………

Gender: ☐   Male   ☐   Female

District:…………………………………

Answer the following questions by putting a tick mark (√) against the correct answer or write the correct answer in the question paper.

1. What is the duration of each English language class?

a. 30 minutes   b. 40 minutes   c. 45 minutes

2. Did you receive any teacher's training for teaching English language ?
   a. Yes   b. No

For each of the following questions select the best option that represents your answer.

Not at all   a little   fairly much   very much

A-4 point Likert scale represents 4= Very Much, 3= fairly much, 2= a little, 1= Not at all

(Appropriateness of the Textbook "English for Today" at Dakhil Level)				
3. Are the contents of the textbook are enjoyable and instructive ?	4	3	2	1
4. The lessons of *English For Today* attracts the attention of the students	4	3	2	1
5. The lessons combine the four language skills (Reading, writing, speaking and listening)	4	3	2	1
6. Vocabulary and reading texts of *English for Today* are suitable for the students linguistic level	4	3	2	1
7. Some of the activities and contents are difficult for the students to understand in the textbook	4	3	2	1

8. *English for Today* is effective in enhancing communicative competence among students	4	3	2	1
9. Do you enjoy teaching English language at Dakhil level using the textbook *English for Today*	4	3	2	1
(Relevancy of the syllabus of English language at Dakhil level)				
10. Is the syllabus relevant regarding the learning outcome of the course?	4	3	2	1
11. Does the syllabus include objectives, which are in accordance with the daily lives of the students?	4	3	2	1
12. Does the program enable students to like learning English	4	3	2	1
13. Does the program create communicative atmosphere	4	3	2	1
(Communicative language teaching activities taught in the classrooms)				
14. Do you arrange for role-play activities in the language classes?	4	3	2	1
15. Do the students practice pair works/ pair discussions in the classrooms?	4	3	2	1
16. Do the students practice peer-feed back in the classes?	4	3	2	1
17. Do the students practice picture description or story telling activities?	4	3	2	1
18. Do the students practice impromptu speech presentations/ debate?	4	3	2	1
19. Are there options of fun activities, games, information-gap and puzzles in the classrooms?	4	3	2	1
20. How much do the students practice English language in the classrooms?	4	3	2	1
21. To what extent do the teachers speak in English in the classrooms?	4	3	2	1
22. To what extent do you explain grammar rules in the class	4	3	2	1

23. Which of the following needs the Dakhil syllabus meet?

☐ Pass the exams ☐ Understand teachers' lectures ☐ Use English in practical life

☐ Get better grades ☐ Be able to use the internet ☐ Write letters and applications

24. What percentage of students can speak in English language at Dakhil level ?

☐ Below 40% ☐ Below 50% ☐ Below 70 ☐ above 70%

25. Which teaching aids are available in the campus?

☐ Black/white board ☐ Over-head projector ☐ Microphones/CD player

☐ Multimedia projector/ Video facilities

26. Do you follow a particular Teaching pattern? a. Yes b. No

27. Do you have a fixed lesson plan to teach English language at Dakhil level from your

Institution? a. Yes b. No

28. Are you allowed to use your own teaching material in the classrooms? a. Yes b. No

29. Who speak more and remain busy in the classroom? a. Students b. Teachers

30. Evaluate the level of proficiency of your students in English language at Dakhil level.

☐ Very Good ☐ Good ☐ Medium ☐ Weak

☐ Very Weak

Appendix 2

[Interview Questions for Students]

1. How much do you use English language in the classroom?
2. In what way do you practice group work, pair works or discussions/debate in the classrooms?
3. Do you feel interest to read *English for Today*? Explain Why?
4. Do you think English is important for your career? If yes, explain why?
5. What is your attitude towards your English language teacher and class?
6. In what way do you learn paragraph writing in the class?
7. In what way do you practice reading in the classroom using the textbook *English for Today*?
8. In what way do you practice speaking and listening in the class?
9. Do the activities of the textbook *English for Today* help you communicate in English in the classroom?
10. What are the language activities that you practice in the classrooms?

[Interview questions for teachers]

1. What activities do the students practice in the reading classes in Aliya madrasas at Dakhil level?
2. In what way do you teach the lessons of *English for Today* in the classroom?
3. How do you teach paragraph writing in the classrooms at Dakhil level?
4. How do you create communicative atmosphere in the classrooms?
5. In what way do you teach completion of sentences, and listening for specific information, gap-filling activities, prepositions, articles, parts of speech?
6. In what way do you teach right form of verbs, changing sentences, voice change, change of degrees, transformation of sentences, punctuations etc.?
7. What are the challenges to teach English language using *English for Today* at Dakhil level in Aliya madrasas?
8. What are your suggestions to improve English language learning in Aliya madrasas?

Appendix 3

[Textbook Evaluation Checklist]

Evaluation Checklist for the Textbook "English For Today"	
Checklist 1 Is the cover page and the quality of the paper standard for Class IX and X?	
Checklist 2 Are the objective and layout clear in the text?	.
Checklist 3 Is there relevant learning outcome?	
Checklist 4 Are there opportunities to practice language skills?	
Checklist 5 Are there clear instructions for each lesson?	
Checklist 6 Are the lessons relevant to the present context?	
Checklist 7 Are the activities of the lessons "Student centered"	
Checklist 8 Are there appropriate visual materials available?	
Checklist 9 Are there stereotyped and boring activities?	
Checklist 10 Do the lessons promote grammar teaching?	.

Peer Observation in Language Class: Some Issues and Strategies

Kazi Shamema Islam

Abstract

The present paper aims at exploring issues and strategies concerning peer observation which is an effective tool for Foreign Language Teachers to acquire the knowledge of a variety of strategies required for making their language teaching successful. 'Peer observation' as a cooperative model of teacher training, facilitates the interchange of teaching techniques and resources amid in-service educators who, thus, get an opportunity to rethink and remodel their personal teaching practices and procedures by adopting the best of their peers. Teachers can receive maximum benefits from 'peer observation' only when it is done to learn from others and to review one's own beliefs and practices in teaching based on others' performances without judging or assessing others. 'Peer observation' is usually done following some stages: Pre-observation, while observation and post-observation stages. However, to reap the best from the process, the observer teachers are expected to follow all these procedures. In addition to an investigation of all these issues, the paper also discusses a cluster of tools and techniques effective for making the process of peer observation successful.

Keywords: Observation, Professional Growth, Peer Coaching, Collaboration, Teacher Development, Journal entries, Teachers' diaries, Mentoring

1. Introduction

'Peer observation' occupies a significant foothold in the study of the ways and strategies to be followed by EFL teachers to improve the quality of their teaching. It is a collaborative process in which teachers observe each other's classes and exchange their experiences following some systematic procedures with a view to bringing about a positive change in their performance as teachers. Such observation is, indeed, purposively done in the educational field to make in-service teachers aware of ever-changing teaching situations as well as teaching techniques dealt with by their peers with the hope that the observer teachers would, thus, get enriched and

eventually apply the acquired knowledge in their own teaching situation while Showers & Joyce (1996) and Gottesman (2000) see all these attempts as opportunities for EFL practitioners to innovate and apply a set of new ideas, techniques and activities in their language classes by modifying or developing their skills with the help of colleagues of the equal status. Again, the benefits of peer observation do not come in a one-way process rather it happens in a two-way process as both the observers and the observees get equal opportunities to be conscious of various classroom issues like time management, teaching materials, teaching objectives, etc. (Wallace 1991) through learning from their peers who are probably more seasoned in dealing all these complex situations (Schon, 1988). Such a collaboration stimulates an effective professional exchange among teachers, academic coordinators, and administrators since in this process teachers see themselves as co-teachers' collaborators and thus, they together create the possibility of being equally benefited. Moreover, peer observation offers teachers a formal opportunity to exchange their skills and expertise, and thus, they can be more cognizant of the methods and techniques they should use in their respective classes and can try to update them keeping pace with their colleagues. In fact, reflective practice, if it happens regularly, can have a positive impact on EFL teachers' competence as they learn how to make knowledgeable decisions and assess how the adopted decisions impact EFL teaching. Thus, peer observation appears to be goal-oriented and there are four important goals behind observation: i) professional growth ii) training iii) evaluation and iv) research (Malderez, 2003). Considering such a huge impact of peer observation, the present paper intends to investigate what are the important aspects of 'peer observation' and what are the strategies to be followed to bring out the positive outcome from it.

1.1 Methodology of the study

A study on 'peer observation 'sounds very important in the context of EFL teaching in Bangladesh as here teachers usually start teaching without having any formal or informal training on teaching. Such lack of training often pushes them to difficulty in conducting classes. Again, teaching particularly language teaching is always viewed as technical and ever-changing. Thus, it requires training to get an optimum outcome from it. Under such reality, peer observation can play a vital role in making untrained and inexperienced new teachers confident and organized in teaching. Another reason behind this study is to make our teachers conscious of the true nature of peer observation as many of them have the

wrong conception about peer observation and are often scared of being observed by their peers fearing that they might be rudely criticized, humiliated, and even penalized by their institution administration if their weakness and loopholes in classroom teaching get anyhow exposed to the institution authority. More particularly, the study also aims at removing such unnecessary fear of the teachers giving them the message that 'peer observation' is not always meant to evaluate or judge them rather learn from them and to share with them their own practices from an objective point of view. Here lies the significance of this paper as it tries to analyze the processes of peer observation and its impact on both the observer and observed teachers. To achieve the aforesaid goal, different books and journal articles have been consulted as the secondary sources of literature and tools for forming ideas for the paper.

2. Literature Review

Considering the undeniable significance of peer observation in EFL teaching, ELT experts and researchers are found interested in giving insightful opinions about 'peer observation' and its role as a tool of in-service learning. James (1973) explains 'peer observation' as an important component of on-the-job training which can minimize the difference between the attained knowledge and its application in a classroom situation. Widden et al. (1996) and Day (1999), emphasizing the complex characteristics of teaching as profession, claim that teaching requires teachers to get fully engaged in applying their acquired knowledge of teaching effectively. They also add that being successful in teaching demands career-long efforts from teachers for their professional growth keeping pace with ever-changing contexts of English language teaching ELT). However, 'peer observation' may take place at both an institutional and personal level. When such observation programs are arranged by the institution, the main goal becomes enabling EFL practitioners to establish meaningful connections between the conditions offered in training and those which the trainees undergo in an authentic classroom situation. For achieving the targeted goal, institution authorities also have a crucial role to play. They should coordinate the whole process of peer observation in such a methodical way that the whole process gets directed towards teachers' professional growth by stimulating working teachers to enrich and utilize their teaching skills (Cosh 1999; Farrel 2001). Thus, the task of the institution administrators is to help teachers achieve professional excellence by developing effective education strategies and successful classes in accordance with the reality of existing classrooms. On the other

hand, teachers can personably feel motivated to observe their peers' classes. In such a situation, the observer teachers need to make a formal approach to their targeted peers and make a well-informed plan about when and how to do it. Whether 'peer observation' is organized institutionally or personally, it should be made a continuous and consistent practice among the in-service teachers if they want to get benefits from the whole process. Hence, regular arrangements for both professional and personal contact sessions among the mentors, the instructors and the peer teachers appear very vital.

2.1 Reviews of the theoretical concept of 'Peer Observation'

The usefulness of peer observation mainly depends on many dynamics which involve how much conscious the foreign language (FL) teachers are of their actions, how lucidly they can describe these activities to their audience, and how enthusiastic they remain to interpret all these issues to them (Gottesman 2000; Showers and Joyce 1996). Thus, for making the whole process of peer observation successful, a culture of providing 'feedback' to the observed teacher is to be developed as it is widely believed that only observing one's peers' practice can no way trigger evaluating and modifying one's own teaching. Feedback turns to be meaningful when it involves communicating both weaknesses and strengths of the observed teachers in their teaching practice and thus assists peer teachers to be aware of their problems and possibilities in their own teaching practices about which they usually remain unaware (Poumellec et al., 1992). On the other hand, it is also important for the observer peer to perceive what the observed peers do in the classroom and how they adapt to ever-changing situations in the classroom, and finally to figure out how they can apply their discoveries in their own classroom situation. In fact, receiving feedback from peers about teaching always appears to have a great effect on sparkling reflection as Reid (1993, p. 3) remarks that "reflection is a process of reviewing an experience of practice to describe, analyze, evaluate and so inform learning about practice". At the same time, it is also believed that teachers usually feel much comfortable in getting engaged in conversations with each other about their classroom practices and in exchanging their personal observations (Richards & Lockhart 1991; Richards & Nunan 1990). Similarly, as peer teaching engages language instructors in a reciprocated reflection of their actions, rethinking about the actions, and illuminations of various factors associated with these actions (Schon, 1988), instructors naturally get opportunities to 'construct their own knowledge by observing others and

thus, develop self-knowledge as well as self-insight' (Fanselow, p.184). Besides, 'peer observation' might encourage teachers having varying levels of proficiencies to make a positive contribution to the professional growth of each other. While examining the usefulness of 'peer coaching model' as a tool of professional growth for both pre-service and in-service EFL instructors in different development programs, Vacilotto and Cummings (2007) discover that peer coaching enables the give-and-take of teaching materials and methods, promotes the improvement of instruction skills, inspires participants to reconsider the teaching techniques and types used by them and creates cognizance of the most helpful behaviors for bringing about a positive change in professional relation. Relevantly, the traditional Multilayered Peer Coaching Model (MPC Model) is a good example of peer observation/coaching which has mainly been initiated for inspiring tertiary level EFL teachers towards their professional development during in-service period. The in-service training model, providing teachers with prospects to assist each other in their professional activities, recommends the tradition of peer teaching in a team-teaching setting. The findings derived from the MPC Model prove that the teachers agree on the point that such cooperation helps them resolve the complications in the in-service situation and promote their professional development. The study findings also demonstrate that the teachers prefer working jointly with their peers or group members in their regular teaching activities to working separately as they think that their ability of critical thinking seems to get triggered while they, along with their colleagues, can work together in the MPC Model. Again, during training session, since the participant teachers get sufficient scopes for contacting each other and bettering their understanding of each other, they are also found to be more content with their teaching than before. Thus, the outcomes derived from the collaborative teaching under the MPC Model seem to be immense as participant teachers find it as an important tool for their professional growth (Meng, Tajaroensuk & Seepho, 2013).

Based on the above-mentioned discussion of related literature, the core objective of peer observation appears to acquire knowledge from the experience derived from the observation. Nevertheless, during observation the observers can never depend on memory only; they need to be meticulous, systematic, and goal-oriented. Some concrete procedures are to be followed so that the observer peers can record the obtained information from their observation and use the recorded information in their future endeavor of teaching. As a matter of fact, when there is any arrangement of 'observation' in FL teaching context, three things need to

be considered to get a better outcome: i) observing the teaching itself ii) recalling of the teaching and iii) assessment and response to the teaching (Richards, 2006). Thus, observer teachers should initially reflect their own teaching techniques in the process of self or peer observation. In the process of recollection, data need to be collected taking help of some tools such as checklists, journal entries, audio or video recording, diaries, etc. During the recollection process, amassed data are to be discussed and analyzed to facilitate teachers to reap satisfactory outcomes which can, ultimately, inspire them to evolve, to rejuvenate, and to grow professionally. This is, indeed, a popular way for the FL teachers who loves seeing their own teaching techniques in others' teaching. Similarly, since teachers see their peers to acquire teaching knowledge from others, they simultaneously get chances to create, recreate and sharpen their knowledge of teaching.

3. Procedural Framework of Peer Observation

Some systematic and well-defined procedures are to be followed for making the whole process of peer observation effective and for getting a better outcome from it. However, the entire observation process can be divided into three segments: a) Pre-observation phase b) While-observation phase c) Post-observation phase. Following is a cyclical presentation of such phases of lesson observation for teacher development (Tenjoh-Okwen, 2003, p. 32).
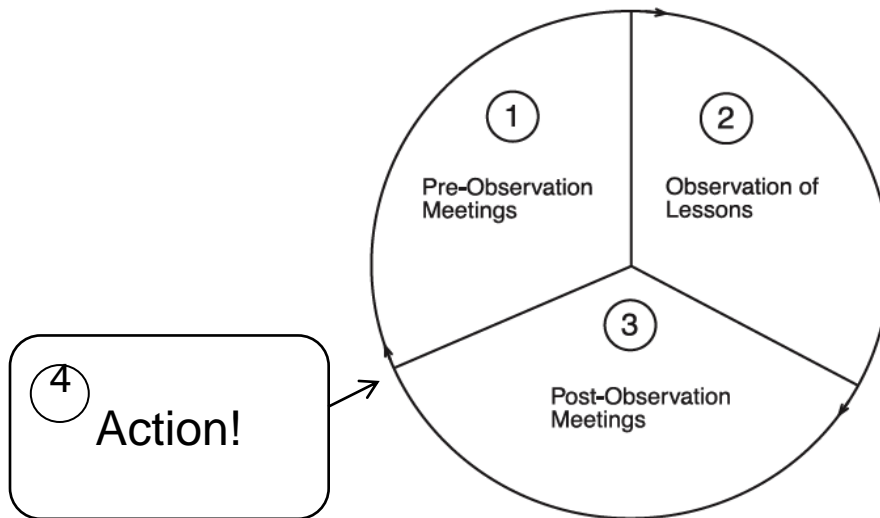
Diagram: cyclical presentation of the phases of lesson observation for teacher development

3.1 Pre-observation phase

During the pre-observation phase, following issues and strategies are to be taken into consideration of all the parties involved. Otherwise, expected outcomes may often remain unachieved.

3.1.1 Arrangement for the observation procedure

The teachers, who agree to take part in a peer observation session, should first come to a consensus on some ground rules and fix the procedures about how to do all these things in an organized way. At this phase, if the observation program is organized by the institution, the institution administration needs to play an important role and they are also the bodies accountable for arranging resources required for the smooth functioning for the whole process of classroom observations such as audio-recorders or videotapes (Widdowson, 1984). Thus, while the instructors participating in the session have properly been oriented to different fundamental matters concerning 'peer observation' and have developed a hospitable relationship (Wallace, 1991) with each other, the actual process of observation begins with teachers' taking turns at teaching and observing classes. Participants, thus, get benefits from an immediate sensitization to a concerted approach to the total process of observation and feedback under the supervision of the administrators organizing such an orientation seminar of instructors before the genuine peer observation occurs (Poumellec et al., 1992).

3.1.2 Determining the goals and the timetable

After the required preparation of the observation process is duly done, the participants should try to find out a point of focus from the total observation and set the main objective of the observation emphasizing the areas of collective interest: the learner-centeredness in the EFL classes (Wajnryb, 1992). After the objective of 'peer observation', which usually emphasize the development area of the observation, and discourages any appraisal or criticism, are indisputably settled, the participants are in the position to make decision about the actual 'observation procedures' and schedule a timeframe for the observation to take place (Beaumont, 2005). Thus, at this phase, the peers meet in pairs to take the required preparations for a series of observations.

3.1.3 Choosing of the required tools for observation

Task groundwork necessitates the selection and the use of certain observation tools needed for the successful conducting of the actual observation which has also an aim of peer coaching (Beaumont, 2005; Cameron, 1997). The 'observation tools' mainly incorporate 'sheets for class observation' and 'video-recordings' for collaborative uses by the administrators, the observers, and the observed teachers in the post-observation session (Cullen, 1991).

However, if the purpose of the peer observation becomes achieving professional growth rather than evaluating the performance of the observed teachers, importance should be given on the use of 'teachers' diaries' and the keeping of 'journal entries' after the actual observation stage being over. While journal entries integrate one's reflection of observation along with the insightful accounts sprang out of the information collected from one's classroom observation, diaries can be hugely helpful to keep records of thoughtful reflection in the first person about different aspects of one's own teaching (Bailey, 1990; Borg, 1998). Journal entries are supposed to be kept as soon as the class is over when the lesson remains alive in teachers' minds. The recorded reflection of each journal entry covers what happens during a specific lesson. Thus, journal entries give an account of the precious visions which peer observation stimulates in instructors as only observing peers' classroom performance is often not adequate to trigger a modification of the techniques of their teaching (Bailey, 1990). On the contrary, in 'diaries' teachers record their own perceptions regarding both affective factors and strategies applied during the class. Bailey (1990) and Bailey and Ochsner (1983) observe that diaries may be used to document contemplative thought in the first person about a teacher's coaching. In fact, keeping diaries facilitates a teacher to understand different subtle factors concerning classroom activities and to identify diversified teaching experiences which cannot usually be understood through observation only (Bailey, 1990; Numrich, 1996). Similarly, Palmer (1992) claims that keeping diaries may offer a huge repertoire of data helpful to understand instructors' practices and performances in the classroom. Thus, these two tools for observation appear significant both for transferring information and for initiating the analysis and interpretation of data which can further become useful for the participating instructors to have a deep reflection of their performance and to develop a mode of collaboration during feedback and debriefing period (Goodson & Sikes, 2001).

3.1.4 Formulation of the observation tasks

Observation tasks help a peer observer emphasize the elements associated with classroom activities towards achieving the objective from the observation and systematic feedback (Poumellec et al., 1992). For obtaining such an end, the chosen tasks for peer observation should not be critical in nature but simple and brief so that the observer can fully be able to give emphasis on one or a few components of classroom tasks and accomplish the observation process in an organized way. It is to be kept into consideration always that the observers are not professional or skilled instructors (Cameron, 1997). To maintain such a basic formula is mainly essential for those teacher-observers who, encountering the tremendous complication of an EFL lesson, might otherwise feel unresponsive to these elements. However, observation tasks are devised and designed just to collect information and so, they do not require any reflection during the while-observation stage. It is to be mentioned that 'observation tasks' aim at serving the core purpose of the process of peer observation by emphasizing the elements that have an impact, for example, on the learner-centeredness of the EFL class (Beaumont, 2005; Wajnryb, 1992). Hence, the first observation task is to enquire the observers to make a map of classroom by sketching a design of the room before starting the lesson. The objective behind such mapping is to make the spatial planning among the learners, the teachers, and the materials clear. The next task is to fill in an observation form by the observers about followed teaching methodologies, teaching materials, classroom activities and many other positive aspects during observation period. As the tasks associated with observation are thought to be successful awareness-raising activities, there are further two tasks: a journal entry and a teacher's diary. All these forms are to be filled in by the instructors (observers and observees) after the class observation is over but certainly before the post-observation stage. However, reflective data derived the learner-centered focus or teacher-controlled focus of the lesson are to be examined and interpreted during the feedback and the debriefing sessions (Schön, 1983).

3.2 Phase of while-observation

Immediately after the participant teachers have been introduced to the basic matters regarding 'peer observation' in the previous stage, they are now able to begin the actual observation process known as the 'while-observation phase'. In this phase, the colleagues exchange a series of visits for observation of each other's classes. The observed teacher fills in the observation forms or tasks that do not necessitate reflective opinions at the

end of the session. Data collected in this phase can serve afterward as the basis for feedback that includes insightful deliberations and the usefulness of possible changes (Bartlett, 1990; Beaumont, 2005; Johari, 2006). However, during this period, the observer peers are expected to follow some ground rules such as they should sit at the back of the room or to the side and remain calm and pleasant. They should also focus solely on the observation without taking part in the lesson.

3.3 Post-observation phase

Post observation phase appears to be very significant in the total procedures of the peer observation as ~~teacher~~ learning mostly occurs in this stage. As a matter of fact, this is the stage through which both the observer and the observee teachers get illuminated with the insightful exchanges and reflection of their experiences concerning with different issues of classroom teaching. Such meaningful interaction often encourages them to define their future course action for professional development. However, best outcomes from this phase mainly depend on the following issues.

3.3.1 Session for feedback

Feedback is always considered to be an important sequel to the task of observation. Without providing feedback, the goal of observation remains incomplete. Poumellec et al. (1992) remark, if the feedback is left to chance, it may not occur at all, thus losing its advantages and benefits to both the observer and the observee. Feedback sessions can involve the observer teachers, observee teachers, and the institution administrator. It can be conveyed through a post-observation meeting where the institution administrator/advisor can play the role of a facilitator, confirming that the object of observation is well-discussed, inspiring the participants to contribute; supervisor, regulating adverse remarks or recommendations inconsistent with the existing theories and practices; initiator, sparking the feedback discussion through fundamental questions; informant, recapitulating participants about the related theories; and counselor, giving observations or recommendations where applicable (Wallace, 1991). After the classroom observation being over, participant colleagues sit for a post-observation meeting under administrators' supervision (Stillwell, 2008). Different stages may be set for this purpose. Each of these meetings can emphasize a separate classroom observation with the presence of the instructor and the classroom observer ('mentor') discussing already identified areas of interest about the implementation of the lesson while

the third-party teachers quietly listen as the session observers (Malderez & Bodoczky, 1999). At the concluding part of the discussion, the third party-teachers may contribute to improving teaching skills of the observer teacher, the observee teachers, and of themselves providing reviews wherein they share their perceptions about the post-observation meeting, recognizing the mentoring behaviors which have largely stimulated reflection as well as those which have the possibility to produce a negative impact, (Farrell, 1998; Johari, 2006; Malderez & Bodoczky, 1999).

It is already mentioned that 'peer observation' should not be viewed as a means for evaluating observee teachers based on observers' personal beliefs as Cosh (1999) and Farrell (2001) remark that an actual observation usually generates an insightful review of one's own philosophies based on others' practice. Yet, teachers, who are found to provide feedback without proper orientation, often appear to be offensive without being useful and supportive to their peers (Wallace, 1991). Thus, in addition to the roles played by both the observed and observer teachers, the administrators' multifaceted and pivotal role in feedback meetings is once again validated as Brinko's (1993), while explaining the 'environments for actual feedback' and ' the custom of reflection' as social activities, says that the feedback sessions must ensure a concerted and supportive situation where both response and interaction are invigorated, and where the administrators' voice is one among several. Such reflection or feedback is also considered to be a part of social responsibility. Considering that reflection seems to be a social activity, Bailey & Ochsner (1983) mention that chances are there to turn 'feedback' and 'reflective skill development' into 'reflective conversations' which stimulate instructors in a self-administered and self-appraised professional development. Such meetings should be taken as an opportunity for introspective conversations among all the parties involved (denoting plurality) rather than for plain 'feeding back' (denoting singularity) creating a new autonomous, collaborative, and trainee-centered ambiance to allow the participating instructors to exchange their experience and expertise and thus, become more conscious of the techniques and tools they use in their own classrooms (Wallace, 1991). If such reflective practices are regularly done, these can trigger teachers' capability in making right choices and afterward in evaluating the impacts of such choices on EFL learning (Brandt, 2008).

3.3.2 Session for debrief

In the session for debrief, the observer and the observee teachers are expected to watch videos which were supposed to be recorded during observation (Cullen, 1991) and make reviews about the teaching journals and the diaries that convey their judgements and understandings they had experienced during the period of their actual teaching and the peer observation. Now the question is what should be the concentration of discussion. Individuals attending the peer observation activity are, indeed, expected to share what teaching traits they would retain, what they would abandon, and what they would add in their future classroom teaching (Beaumont, 2005). How learners and teachers are to be benefited from such an observation process is also to be elaborately revealed through the reflections of the participating teachers. Moreover, teachers can also make reflection on the influence that the observation class has had on their own views about EFL teaching and learning, how the lesson is related to the existing theories and how the activities in the lesson are related to their journal entries (Bailey, 1990). Finally, data used in the debriefing stage should specify warm participation of all the teachers in decisions about objectives, activities, content, sequencing, and resources of their modules. In fact, the worth of the shared process need to be well perceived and emphasized (Gebhard, 1990). Again, the outcome of debriefing should denote that peer coaching enhances participants' cognizance of their specific responsibility to review and revise their classroom practices, as well as of the value of working as a team to improve the quality of their teaching and classroom performance (Farrell, 2001).

4. Conclusion

To sum up, it can be said that 'peer observation' appears to be a non-evaluative progress model of peer teachers' performance and practices. Such an observation makes teachers holding equal standing work jointly to exchange their views about teaching, observe the classroom situation of other teachers, deliver reciprocated support and finally acquire different new skills. As a matter of fact, teachers' development is basically 'classroom-embedded' through peer observation techniques. In 'peer observation' teachers act as a group engaged in discovering and subsequently advancing their acquired knowledge of learning theory and its application in classroom performance and thus, mirroring its efficiency in the real situation. When teachers get truly engaged in collaborative practice like 'peer observation', they get more chances to exchange their

skills and use the opportunities to reconstruct or advance the EFL methodologies they have been using in their context for long. All these aspects, however, indicate that in such a context the participating instructors become more enthusiastic to carry on their in-service professional advancement. Similarly, factors like peer support, mutual understanding, and companionship appear to be the most effective approaches to develop meaningful relationships among peers in a peer coaching program. Again, the success of peer observation mainly depends on the admiration that the peers foster for one another even in differences of opinions and spirits. Unhesitant sharing of failure and concern and encouraging other to remain positive about their teaching are some other important aspects of successful peer observation. Besides, peers, expressing their commitment of reciprocal support through sharing the moments of success and recognizing other's good and genuine endeavor, can also motivate peers to achieve excellence. In this respect, careful wording has a big role to play as all these efforts become more penetrative when peers are adequately conscious and sensitive in wording while passing judgments on the performance of the observed peers as such approach works very well to remove their anxiety and embarrassment. Finally, such a collaboration encourages much less demanding and energized expert discussion among the peers and the institution administrators as teachers, after such observation and subsequent feedback, feel more engaging in discussing their practice and sharing their individual perceptions to bring about a positive change in the classroom performance.

Unfortunately, this strategy for teachers' development is rarely practiced in our local context. In Bangladesh this practice is absent in almost every level of education. Paul (2021) mentions "In Bangladeshi colleges, such evaluative culture to enhance teaching performance is absent". Consequently, the newly recruited and less experienced teachers inevitably fail to recognize their strengths and weakness as teachers. These sets of teachers, naturally, do not find any point to advance their teaching experiences and performances and thus, fall back on traditional teaching approaches that cannot ensure better learning outcomes by students (Anglin & Anglin, 2008 as cited in Paul, 2021). Henceforth, to guarantee and increase teaching performance and student learning outcomes, teachers' individual needs should essentially be emphasized (Wilson & Easen, 1995). Likewise, the teachers should also deeply reflect on their teaching to have a clear-cut understanding of its potency and to identify the zones to be improved (Tice, 2004). Unless the teachers can properly

identify the areas of teaching skills they need to improve, they cannot find the exact remedy for enhancing their performance in teaching. Finally, if the aspects and strategies discussed can truly be followed and practiced by the teachers of Bangladesh, they will certainly turn out to be teachers creating more positive impacts on learners and their learning outcomes.

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Frost's Symbolic Imagery:
'the pleasure of ulteriority'

Dr. Gauranga Mohanta

An original voice, Robert Frost (1874-1963) is one of the most talented and distinguished figures in the twentieth century American poetry. The poetic landscape of his universe is uniquely characterized by the proliferation of images and symbols. These are the "component structures" of poetry through which Frost's sensory and extrasensory experiences of phenomenal and noumenal cosmos are strikingly divulged. Ezra Pound eulogizes Frost's power of manipulating visual images. Pound insists that "Mr. Frost holds up a mirror to nature, not an oleograph" (Modern Georgics 16). Pound's imagism is based on pictorial images. But the imagism which Frost argues for is the imagism of the ear. "I cultivate the hearing imagination" Frost writes to John Cournos, "rather than the seeing imagination though I should not want to be without the latter" (Selected Letters 13). It is palpable that the images of sound are given greater importance than those of sight. Frost's sentence sound which can easily be correlated with metrical regularity distinguishes him from the Imagists. Sentence sounds are "gathered by the ear from vernacular" and only the most original writer "catches them fresh from talk, when they grow spontaneously" (Frost, Letter to Bartlett 111)

Frost's imagery does not merely order the common experience; it unfolds and sets out complex psychical topography. Frost insists "imagery and after-imagery are about all there is to poetry" (Dabbs 121). When an image works suggestively it can never be distinguished from a symbol. The symbolist symbol is simply an image imbued with suggestive or mysterious import. Frost's symbolist strategy is also almost analogous to that of a symbolist; he selects an image to make it "a symbol of something else which is larger or deeper than itself" (Doren 195). Frost's symbolism, like that of Yeats, is thought-provoking and intricate. But Frost is less mystical than Mallarme or Yeats. He is at heart a contemplative spectator of "the earth and the ways of man on the earth" (Benét 117). Like a symbolist symbol Frotian symbol is precisely plurivalent. It resembles a many-sided crystal sparkling with shades of meaning. "The thing I'm saying", Frost maintains, "has got another behind it—all sorts of analogies. It's a symbol of many things". (cited in Reginal Cook 250).

Frost developed a distinctive kind of symbolism which is marked by "the indirect and subtly suggestive quality" (Lynen 47). Frost's notion of suggestivity could easily be grasped for he claims, "we like to talk in parables and in hints and in indirections—whether from difference or some other instinct" (Education by Poetry 720).

Metaphor is above all the bedrock of Frost's symbolism. Frost's complicated ideas and emotions are communicated through his metaphors to which he attaches great importance. To Frost, "poetry begins in trivial metaphors, pretty metaphors, 'grace' metaphors, and goes on to the profoundest thinking that we have. Poetry provides the one permissible way of saying one thing and meaning another" (Collected Poems, Prose and Plays 719).The objective Frost wants to achieve through metaphor is "the pleasure of ulteriority". Each of the poem turns out to be "a new metaphor inside or it is nothing" (Richardson 147). Frostian metaphor which is essentially suggestive assumes the character of the symbol. Metaphor is the vital spark of poetry. Frost identifies metaphor as a "living thing" (Collected poems, Prose and Plays 723). It is "the height of poetry . . . the height of all poetic thinking". In Frost a symbol could interchangeably be used with metaphor. Because almost all the metaphors which spring from the vertex of Frostian thought tend to be cryptically significant. Hence Frost's symbolist strategy seems to tally with Yeats's: "Metaphors are not profound enough to be moving, when they are not symbols. . . poetry moves us because of its symbolism" (The Symbolism of poetry 156, 163).

In exemplifying the symbolist strategy of Frost, some of his major poems can be analyzed. A shift in the connotation of home image is well-marked in the dramatic eclogue "The Death of the Hired Man" in which Silas, a shiftless, infirm hired hand returns to Marry and Warren, his old employers, at a time when veritably "His working days are done". The two definitions of home that we find in this poem, emblematically characterize Frostian "Sentence sound". Warren defines home derisively as "the place where, when you have to go there/they have to take you in." Conversely Marry defines it as "something that you somehow haven't to deserve". The suggestive images of the poem can well be construed allegorically. Hence, 'home' may be considered as a spiritual symbol suggesting divine blessing. It is worth noting that warren represents the retributive figure of God dowered with the attribute of reason and justice while Marry stands for benign figure of God endowed with the attribute of charity and mercy. "Illogical kindness—that is mercy", Frost wrote to Wilbert Snow in 1938.

Frost's notion of mercy which moderates justice is dexterously elucidated in this poem. Silas who represents humankind repeatedly failed to keep promises of life before yielding to death. So his soul should justifiably be damned to perdition. But it is mercy for which he is ensconced at home. Like his death, the death scene in this poem is equally symbolic:

" . . . I'll sit and see if that small sailing cloud

Will hit or miss the moon".

It hit the moon.

Then there were three, making a dim row,

The moon, the little silver cloud and she. (lines 160-164)

("The Death of the Hired Man")

Frost, like a chiaroscurist manipulates his symbolic imagery very superbly. "The moon" that symbolizes the light of Silas's life can better be taken as an example of the "clarus" (clear or light) image and "small sailing cloud" suggesting the agent of death that "hit the moon" can better be considered as an example of the "obscurus" (dark) image. The hired man's death symbolizes the salvation of human soul. In the epigram "Fire and Ice" Frost psychologically resolves the disputation over planetary apocalypse: "Some say the world will end in fire, / . . . for distruction ice / is. . . also great / And would suffice". Frost prognosticates that the two antipodal extremes love ('desire') and 'hate' can equally destroy "the world" or human race. In the latter poem "Beyond words" "icicles" are typically associated with 'hate': "That row of icicles along the gutter / Feeds like my armory of hate". Likewise, in "Fire and Ice" 'ice' which can be recognized as an intimate symbol suggests hatred. The other catastrophic passion, 'love' is symbolized by 'fire'. 'Design' which is called by Frost "a set of little sonnet" deals with spider image schematically associated with the imagery of moth and heal-all "a subverted cosmic flower". The original version of "Design" entitling "In White" (1912) distinctly discloses that whiteness is one of the core symbols of this sonnet. In fact the symbol of white colour in this sonnet is treated more enigmatically and appallingly than the whiteness in "The White-Tailed Hornet". The triadic collocation of albinic spider, moth and heal-all dramatizes the "design of darkness" in design. The "dented spider" of "In White" emerges as "dimpled" "fat and white" one stimulating an inculpable infant "holding up a moth / Like a white piece of rigid satin cloth" on "a white heal-all" in the octet of "Design". Unlike the "orchises" representing beauty and spirituality in the poem "Rose

Pogonias" or "a leaping tongue of bloom" suggesting fraternity in the poem "The Tuft of Flowers" the "white" heal-all, which loses its natural blueness insinuates gothic horror. The simile "like a white piece of rigid satin cloth" is terrifyingly implicative. In 'In White' Frost uses "lifeless satin cloth" instead of the image of "rigid satin cloth" which is expressive of rigor mortis or the living of a coffin. Hence the trio—spider, moth and heal-all grows into "Assorted characters of death and blight."

These characters like "the ingredients of a witches' broth" are ironically unlimbered "to begin the morning right" an intricate image implying a grisly morning "rite" or funeral or "danse macabre". As the octet reaches its close, the "beady spider" of "In White" turns into a "snow-drop spider" indicating the ironic innocuousness of the insect, for the white flower, snow-drop which generally represents innocence is "like a froth" that is tacitly linked up with the poisonous "broth" of the witches; the image of moth-wings resembling "a paper kite" indicates cadaverous stiffness. In the sestet Frost unconventionally phrases his three cogitative questions. The first question, "What had that flower to do with being white, / The wayside blue and innocent heal-all?" points up the enigmatic "albino catastrophe" imaged in the first and second line of the octet. The second question, "What brought the kindred spider to that height, / Then steered the white moth thither in the night?" accentuates plausible conniving force in nature. The third question, "What but design of darkness to appall?" presumably suggests the fact that freaky whiteness sets the stage for a macabre play. The small tragic tableau deviously designed points to a maleficent deity whose ubiquitous existence in the universe can never be impugned. Thus the whiteness of spider, moth and heal-all can be recognized as an intimate symbol suggesting sinister force active in cosmic life. The image of woods is reiterative in the Frost poetry. The woods or tree image sculpts intricate world of varied experience. The image of tree associated with the ascending image of ladder is adroitly wielded in 'After Apple-Picking'. Its wider symbolical properties induced Cleanth Brooks to consider it "a symbolist poem" (114). From the outset of the poem, the metaphoric images inspire intricate symbolism:

> My long two-pointed ladder's sticking through a tree
>
> Toward heaven still,
>
> And there's a barrel there that I didn't fill
>
> Beside it, and there may be two or three
>
> Apples I didn't pick upon some bough. (lines 1-5)
>
> ("After Apple-Picking")

Metaphor is the wellspring of all thinking for Frost. In the essay "Education by Poetry" Frost employs the image of ladder as metaphor which has covert meaning than its literal one. "We still ask boys in college to think, as in the nineties, but we seldom tell them what thinking means; we seldom tell them it is just putting this and that together; it is just saying one thing in terms of another. To tell them is to set their feet on the first rung of a ladder the top of which sticks through the sky" (Collected Poems, Prose and Plays 723). In this poem the vertical "two-pointed" ladder is expressly metaphorical. Dennis Vail discerns the "ladder" as "male" and the "barrel" as female symbol which conjointly suggest "a human completeness in the nature of the effort" (Vail 141). Mordecai Marcus explores psychosexual imagery in "After Apple-Picking." To Marcus the image of pointed and sticking ladder is "overwhelmingly phallic" (187). Nevertheless, critics like George Monteiro and Dorothy Judd Hall endeavor to perceive religious dimension in this poem. Monterio considers the poem as "an elaboration of Genesis" (62). To Hall the apple-picker represents a "fallen man" or "a latter-day Adam" who "symbolically perpetuates the Genesis legacy of mankind's first act of disobedience. He is tired from physical labor and weary, too, of the burden of original sin". According to her "two or three / Apples" which the apple-picker "didn't pick upon some bough" symbolize "the human lot", Frost often observed as "unfinished business" (Hall 3-4).

We find that the symbols of this poem are exceedingly plurivalent. The solitary apple-picker devoting himself to his tough pursuits may also represent an artist; the apple-picking suggests near perfectionism in art or in an artistic life. "A tree" is suggestive of creative life of an artist. Art is monumental but life is fleeting. The poet ventriloquizes the truth that it is humanly or artistically inconceivable to procure all the gems of life. Hence "two or three / Apples" are kept unplucked and "a barrel" is left unfilled. The "long two pointed-ladder" left sticking "Toward heaven still" symbolizes an artist's aspiration for immortality through creative achievement. Drifting into the "Essence of winter sleep" the lonely apple-picker views a strange world "Through a pane of glass" skimmed from the "drinking trough". This symbolic imagery indicates an artist's entrance into the world of chimerical dreams in which the contents of imagination appear to be magnificently larger than those of factual world:

> And I could tell
> What form my dreaming was about to take,
> Magnified apples appear and disappear,

> Stem end and blossom end,
>
> And every fleck of russet showing clear. (lines 16-20)
>
>   ("After Apple-Picking")

The dream of "Magnified apples" suggests the recollections of creative achievement of a contemplative artist.

In "After Apple-Picking" Frost quaintly makes use of afterimagery. Afterimage is a psychological term denoting an image or sensation which persists or recurs after the external stimulus has been withdrawn. The apple-picker's "sight" experienced "through a pane of glass" shapes visual afterimage while "There were ten thousand thousand fruit to touch" moulds a tactile afterimage. The colloquialism, "ten thousand thousand" typically characterizes Frost's "sentence sound".

We could experience a complex imbrication of dream and reality, earth and heaven, day and night, sleep and awakening in the textural make-up of this verse. This imbrication of antithetical elements may suggest the cyclical mobility of life. The apple-picker appears to be discomposed as to ascertain the lineaments of sleep: "one can see what will trouble / This sleep of mine, whatever sleep it is". The image of woodchuck throws light on sleep. Woodchuck's hibernation or "long sleep" is dreamless. So it can never be analogous to human sleep. "This sleep of mine" is nothing but "just some human sleep" which is full of dream or mental activity. The "long sleep" or hibernation resembling "the little imitation of death" that terminates in springtime, aptly suggests "resurrection" and "just some human sleep" suggests reawakening (Gerber 136).

Frost's third volume 'Mountain interval' (1916) opens with a mellifluous lyric "The Road Not Taken" which like the first sonnet of 'A Boy's Will' presents wood imagery. The image of wood depicted in 'The Road Not Taken' is substantially coupled with the image of road:

> Two roads diverged in a yellow wood,
>
> And sorry I could not travel both
>
> And be one traveler, long I stood
>
> And looked down one as far as I could
>
> To where it bent in the undergrowth; (lines 1-5)

This wood imagery wedded to road image echoes Emily Dickinson's "forest" and "road" imagery employed in one of her poems wherein the poetic persona comes to the "odd fork in Being's road" and apprehends that his "pace took sudden awe" for "Before were cities, but between, /

The forest of the dead" (Johnson 303). The images Dickinson makes use of are tinged with religious orthodoxy while Frost's secular images are characterized by psychological intricacy. What Frost wrote to Susan Hayes Ward on 10 February 1912, sheds light on the outstanding suggestivity of "The Road Not Taken": "Two lonely cross-roads that themselves cross each other I have walked several times . . . The other evening as I came down one to see a man, who to my own unfamiliar eyes and in the dusk looked for all the world like myself, coming down the other, his approach to the point where our paths must intersect being so timed that unless one of us pulled up we must inevitably collide. I felt as if I was going to meet my own image in a slanting mirror. Or say I felt as we slowly converged on the same point with the same noiseless yet laborious strides as if we were two images about to float together with the uncrossing of someone's eyes. I verily expected to take up or absorb this other self and feel the stronger by the addition for the three-mile journey home" (Selected Letters 45). In this letter Frost delineates how he ran across an image of another self the other evening. The context of confrontation with one's "other self" at the convergence of roads is distinctly related to the context of "The Road Not Taken" in which the poet detached himself from one approachable self at a divergence of roads (Abel 556). Hence, "road" may be considered as a psychical symbol suggesting an image of self or a pattern of life.

Road-symbol underscores duple limitations of human life. To begin with a human being cannot traverse two roads at the same time; they have to make a decision to take one road or to choose one pattern of life from a number of alternatives and, secondly no human being can envisage the pellucid chart of their future, for future is always unpredictable. So when a human being makes a decision to embrace a pattern of life, they feel perturbed about the consequence of life-pattern chosen:

> I shall be telling this with a sigh
>
> Somewhere ages and ages hence:
>
> Two roads diverged in a wood, and I—
>
> I took the one less traveled by,
>
> And that has made all the difference. (lines 16-20)
>
> ("The Road Not Taken")

Woods can be considered as a psychical symbol suggesting involute topography of human psyche entangled in "the problem of choice". The road "less traveled by" resembling "the way we took" in the poem "In

Neglect" of 'A Boy's Will' may aptly suggest the image of poetic self which the poet absorbed with a sense of perturbation.

One of Frost's most popular poems "Stopping by Woods on a Snowy Evening" provides interrelated images of woods, animal and snow laden with uncanny symbolical implications. In the "darkest evening of the year" the traveler of this poem stops his buggy somewhere between "the woods and frozen lake" to "watch" the woods "fill up with snow". The "little horse" remonstratively jangles its "harness bells" which infuse a new life of awareness into the aesthetically charm-struck traveler. In this poem "the darkest evening of the year" may suggest the winter solstice. The murky winter landscape with its snowfall has tremendously baffled the commentators. John Ciardi discerns "death wish" in the symbols of "the dark and the snowfall" (70). But it is our contention that no symbol of this poem insinuates death-wish. The "snow", "downy flake" or dark landscape may indicate threat of death but the "harness bells" suggesting consciousness that leads the traveler to overpower this threat. Life-urge is so potent in this poem that ultimately the traveler can neither slough off his personal nor social responsibilities; he realizes that he has "promises to keep" and "miles to go" before he sleeps. The image of "lovely, dark and deep" woods is extremely suggestive. Allen Tate fittingly compares the woods with a temptress who is "cold, mysterious(dark), and unfathomable" (68). Hence, woods can be treated as the psychological symbol suggesting temptation in the ways of unending life journey. One must not succumb to this temptation; everybody should feel impelled to move on by the realization of obligations before yielding to death.

Images and symbols which are inseparable in Frostian poetic world are "Two lofty and original to rage". The less traveled road exhorts the readers to light upon some provinces of Frostian poetry lying untrodden. This is how "a voyage of discovery" Frost embarks can be illuminated.

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Beyond Borders and Body: Postcolonial Biopolitics in Khushwant Singh's novel *Train to Pakistan (1956)*

Jarin Tasneem Shoilee

Abstract

The historic events centering around the partition of India are fictionalized in Khushwant Singh's novel *Train to Pakistan* (1956). The novel returns "To trauma, to the past, to a ghetto" – as described by *New York Times* book review, the novel rewrites the history of Hindu-Muslim-Sikh civil war instigated by a trainload of corpses from Pakistan, which was equally horrific like the previous colonial experiences of Indian people such as the Amritsar massacre. Set in summer, 1947 India, the novel depicts more of the post-independence confusion, which can also be termed as 'postcolonial interregnum'. In postcolonial scenario, human lives are governed and disciplined under the power regimes of various neocolonial rules a.k.a "biopower" in Foucauldian term. However, in post-colonial context of India, men's bodies and their masculinity are equally turned into subjects of manipulation to support the hegemony of the nation state and the phallocentric strategies of colonialism. This paper argues that in Khushwant Singh's novel *Train to Pakistan,* the fictional village Mano Majra is still governed through internal biopolitics, which is merely a miniature version of colonial governance. It also argues that male body and masculinity are used as biopolitical weapons to entertain the power-network of neocolonial regime, and therefore, shows how the native people are fed with false promises of nationalism.

Keywords: biopower, gender, postcolonial biopolitics, masculinity, phallocentrism

According to a news article of February 12, 2020, titled "Anti-CAA stir: Panel holds 53 guilty of damage to property in Muzaffarnagar", in Muzaffarnagar district of Indian Uttar Pradesh, 53 protesters were asked to pay a fine of 23 lakh rupees to compensate for the 'vandalism' against the government. Similar steps were taken in other districts of the state. Many shops owned by the muslims had been sealed in different cities. The Muzaffarnagar administration said that they had identified the protesters from CCTV footage and visuals of the violent protests against the new BJP-initiated Citizenship Amendment Bill.

Such repressive strategies of Indian government root back to several politico-historical instances, such as the colonial experience during the 1947 partition. Starting from the complexities of 'divide and rule' policy of British imperialism, newer policies are implemented in various govt-led institutions in India. The ruler, in this case, operates within a certain bubble of power – that is, a regulatory boundary from where control is ensured. In this regard, Italian political philosopher Giorgio Agamben's ideas about political surveillance may be relevant. In Alias Recluse's interview titled "'God Didn't Die, He Was Transformed into Money' - An Interview with Giorgio Agamben - Peppe Savà", Agamben recalls the 'colonial' strategies during World War II holocaust. He argues that Hitler might not have "the same possibilities of control" as seen in the 21st century's "biometric data, surveillance cameras, cell phones, credit cards) that are at the disposal of our contemporary states" (Recluse), but the methods of surveillance were very similar. It shows that the possibilities of control change from time to time, but the biopower regime still remains the same. The 21st century biopolitical crisis has moved towards neocolonial forms of terrorism and surveillance from a safe distance – which relates to the power dynamics within the postcolonial Global South.

Set in post-partition Panjab, India, Khushwant Singh's novel *Train to Pakistan* depicts the trauma of an inter-communal riot in the small Indian village Mano Majra. As soon as 1947's partition becomes a reality for Mano Majra, the thousand-year old harmony of the village is shattered by the growing ethnic tension and violence. The villagers are hardly aware of the political tension building up as the aftershocks of partition. Even in postcolonial period, the local authority of Mano Majra reflects the ideologies of colonial government that ruled the Indian subcontinent. Soon after, with the sudden arrival of the ghost train loaded with dead bodies of thousands of refugees, Mano Majra is devastated by the horrors of Sikh-Hindu-Muslim civil war. However, the novel also tells the story of inter-religious love between Juggut Singh and Nooran; as they suffer from the uncertainty and struggles of post-independence era. Using theoretical insights from Michel Foucault, Giorgio Agamben, Gayatri Spivak and Raewyn Connell, this paper explores how the governing body of the village Mano Majra uses (neo)colonial strategies in Khushwant Singh's novel *Train to Pakistan.* Additionally, this paper inquires that these biopolitical strategies are supported by the utilization of Indian male body and the concept of masculinity to feed the so called nation-building impulse.

Biopolitics and Bio-power: Power Imposed on Body
Theoretical Framework

The theorization of biopolitics is known to be developed by French critic Michel Foucault in his book *History of Sexuality (1976).* Biopolitics refers to power exercised by authority on biological body in order to control or discipline a large number of population. Biopolitics, as a political philosophy, establishes a deep connection between politics and biological life. Human life becomes the ultimate target of exercising control that closely resembles with the idea of 'hegemony'. The hegemonic practices of control are "situated and exercised at the level of life, the species, the race, and the large-scale phenomena of population" (Foucault 137). Conversely, sometimes Foucault uses the term 'bio-power' to invoke the negative aspect of power, that is, 'power over' life, through mediums of "coercion, constraint and domination" (Simons 191). However, colonial biopower consists in the management of bodies, what Giorgio Agamben would refer to as the use of power to 're-define' or 're-produce' life. In Katia Genel's definition of biopower, the target is the 'body' or 'social body' as "the object of disciplines and surveillance); a labor-power; a biological life (the life of the ill or the life of populations); an existence" (Genel 44).

However, in the 21st century, Foucault's theorization of biopower and biopolitics is critiqued by Giorgio Agamben on the one hand, and Michael Hardt and Antonio Negri on the other. Hardt and Negri's approaches denote a postmodern and postcolonial stance towards biopolitics. Hardt and Negri contend that the current implication of biopolitics operates not only through the formalities of obedience and disobedience, but also "along the entire range of life and death, wealth and poverty, production and social reproduction, and so forth" (Campbell and Sitze 219). It suggests that the present paradigm of biopower (or, the new power) incorporates the question of legitimacy – that is, the exercise of legitimate force. The legitimacy of this repressive system, according to Hardt and Negri, is known as "interventions". Furthermore, the imposition of such interventions demands Thomas Lemke's study in the context of postcolonial biopolitics. In this scenario, the borderline between economic production and the politics of social body gets dissolved – "The political, the social, the economic, and the vital here all dwell together" (Lemke 4). Biological bodies, in this process, become inseparable from the political regimes of the state. Thus, life of an individual is governed under the administrative control of the new colony, with the body of 'colonial other'

operating as the victim of domination. The rise of biopolitics was also closely associated with imperialist capitalism, where agricultural means held a large source of labor-power. Naturally, fertile village areas (Mano Majra in Singh's *Train to Pakistan*) were the main targets of colonial exploitation and control of body in molding its subject. Thomas Lemke ponders how the society's control over individuals was accomplished: "not only through consciousness or ideology but also in the body and with the body" (Peters 95).

However, recapitulating Louis Althusser's analysis on state apparatuses, biopower is imposed on the colonized people's lives often in direct or repressive ways, (e.g. bodily tortures, genocides, wars, military invasions) or often in indirect or ideological ways (e.g. institutional education, imprisonment by law and order, media discourses). Singh shows the pathetic condition of Mano Majra that has not yet been touched by the spark of postcolonial India, where nationalism seems to be a battle cry to bolster the governing body or state power.

The Historiography of Partition – Is it Naturalized or Overlooked?

The discourse of partition itself works as biopolitical technology, which changes its forms according to power regimes. Khushwant Singh takes relevant notes from the history of 1947 partition for his *Train to Pakistan,* to re-create the 'reality' of partition in art and literature. Since Cyril Radcliffe went on with the arbitrary division of the Indian subcontinent, his mission seemed to be aimed at keeping the power of the colonizers intact over the new territory. It was a well-planned strategy to instigate ethnic and gendered violence among the citizens of the emerging nation-states. In less than nine months, at least sixteen million people were forced to migrate to their places of safety and become refugees because of Lord Mountbatten's unwillingness to declare India and Pakistan as two separate states. Kavita Daiya recalls the historical consequences of the discursive policies of partition: "As the borders were drawn and sporadic news traveled of the lines which marked one village Pakistani and another Indian, huge populations were "exchanged" according to their religious affiliations" (*Violent Belongings* 6). The traumatic memory of partition and loss were overshadowed by later sentimentalized speeches by post-independent political leaders, as an attempt to make the violent past less poignant and eventually a matter of historical recall in order to maintain current ethnic-religious bonding. Such lack of proper memorialization of 1947 partition is indeed a neocolonial political scheme. For instance, the Indian Home Minister Vallabhbhai Patel once argued in a speech in

January 1948 that if the Indians had not accepted partition, India would have broken into bits. This naturalizing state discourse about the trauma of Partition is one of the factors responsible for the failure of post-colonial nationhood.

Postcolonial Mano Majra - the 'Panopticon' of Biopower

Even after the British left India, the power-nexus of colonial rule is still functional in the form of 'internal colonialism' as portrayed in *Train to Pakistan*. In internal colonialism, which is distinct from 'normal' colonialism, "both colonizer and colonized peoples occupy the same territory" (Rogerson 106) and the colonizer-colonized relations take place within once single geographical space. The same situation is observed in the post-independent India. The privileged minority, consisting of the educated and elite Indians, reaps the harvest of independence. In *Train to Pakistan*, people from different social classes use Mano Majra for different interests. Mano Majra becomes the 'panopticon' of biopower. Power network is spread in every corner within the village hierarchy by controlling each other's lives. In other words, the social body of the village population is caught into the biopower regime. Here, political worker Iqbal wants fame; corrupt magistrate Hukum Chand wants personal pleasure and luxury; the sub-inspector enjoys torturing the prisoners, and village *badmash* (or, criminal) Jugga roams around with mischief in mind. Under the control of the powerful and the privileged, the common working class villagers remained uneducated and uninformed about the political tension of the time. When Lambardar speaks to Iqbal, he works as the mouthpiece of the peasants, "Educated people like you, Babu Sahib, will get the jobs the English had. Will we get more lands or more buffalos?" (Singh 51). This hopeless moment marks modern-day biopolitical paradigm – a futile yet powerful interdependence between the ruler and the ruled – which Agamben would call as "intimate symbiosis with bare life" (Campbell and Sitze 146). As a result, the lambardar expresses his fondness towards the English officers because they were 'better' than Indian officers. The self-other relationship based on personal aids and likeness may transcend colonial relationship, but it carries the state's biopolitical ideologies.

As for Hukum Chand, he holds the image of colonial masters. In other words, he represents a miniature of the colonial government. His servants address him as "government". Chand's philosophy of governmentality is a pragmatist, Machiavellian one. The governmentality of biopower, according to Foucault, is combined of two forces – macro-physical force

or disciplinary power and micro-physical force or political rationality. This combination of governmentality can be called a part of 'vital politics', or politics of life. In vital politics, the care of the subject becomes the duty of the state. To ensure this 'care', the state invents solid and justifiable reasons by the operation of different 'technologies'. Hukum Chand's role as the local magistrate is largely based on such technology. In the time of crisis, he concentrates on the "immediate problem" of saving the Muslims. He rationalizes his strategies of governance as "a minor error into a major investment" (Singh 105). Chand first predicts about the upcoming killing in Mano Majra and urges the police forces to take necessary steps. But such farsighted, benevolent act of public welfare is not free from discipline as well as his personal interest. Knowing about the upcoming catastrophe in the train full of Chundunnagar Muslim Refugees, he is suddenly reminded of Haseena Begum – the prostitute he loved. He orders to free Jugga and Iqbal immediately from their imprisoned state - not only to let Jugga save Nooran, but also Haseena Begum, because both Nooran and Haseena Begum would be in the same train. Thus Chand is guided by his impulses in the moment of communal crisis which is unexpected from a local ruler.

In postcolonial biopolitical governance, the colonized people experience a hegemonized, make-believe process of subjugation and feel that they need to be 'civilized' for their own betterment. Iqbal discovers that the Mano Majrans do not know the difference between political freedom and economic freedom. They are reluctant towards actual independence because of the fear of remaining the same 'subalterns' under the power-scepter of Indian 'elite-subalterns'. Thus, the spirit of national independence becomes questionable and paradoxical. On further level, Iqbal attempts to deconstruct the objectives of government rules and regulations. Iqbal says to Jugga, "Yes, the Englishmen have gone but the rich Indians have taken their place . . . You are in the same handcuffs and fetters which the English put on you" (Singh 64). To contextualize biopower as Foucault defined it here, it leads the subject to self-chosen imprisonment. The subject fears to break laws or think otherwise what they have been 'taught' to think. The institutionalization of public brain is another serious aspect of postcolonial biopolitics. Jugga begins to think, imprisonment would grant him redemption. His anguished comments on the nature of disciplinary strategies of prison in Mano Majra: "The police are the kings of the country. They will let me off when they feel like it" (Singh 112). Jugga says that if the police want to keep him in the prison, they would trump even cases for him to legalize the methods of

imprisonment; because the nature of "legal punishment" has become "the framework for a care or cure of the individual" (Simons 192). Jugga accepts his fate as a lifetime prisoner because he is a *badmash* or criminal. He does not believe Iqbal's words that it is the neocolonial government rules that make him a criminal. Khushwant Singh's fictional Mano Majra is situated on the border of India and Pakistan, symbolizing the transition point between colonial and postcolonial period. The government would control its population from a safe distance, leading to willing conformation towards institutions, for a promise of 'better life'. This vivid instance of hegemony is echoed in Lambardar's claim, "We were better off under the British. At least there was security" (Singh 53). Here, the "subaltern", in the form of "the Self's shadow", happens to stand in an ambivalent relation to power – neither conforming to it fully nor rejecting it outright. When things go down and communal hatred reaches its peak, even magistrate Hukum Chand finds it terribly hard to re-claim Mano Majra's local power.

Another dangerous side of postcolonial biopolitics is the notion of self-destruction. The colonial government no longer exercises its 'ancient right to kill', as Foucault would say it, rather it passes the **'right'** of death to the citizens' own hands. Foucault attests in his "The Right of Death and Power over Life", that the entire populations are mobilized for "the purpose of wholesale slaughter in the name of life necessity" (Foucault 137). The arbitrariness of life-death experiences passively denotes a life-in-death situation. The thanato-politics of the state operates as an integral part of biopolitics. Death is reduced and 'conquered' in postcolonial Mano Majra by overlooking the consequences of exploiting death- "the death of some may guarantee life and survival of others" (Lemke 7). In this scenario, the subject does not hesitate to 'kill' itself, starting from diasporic struggle both from the sides of Hindus and Muslims. Bodies of the subject are forced to migration, massacre, burial under mass grave, burning in public etc. Evidence remains in the novel when a Sikh soldier plans of stretching a rope across the bridge. It bears the legacy of colonial atrocity, "it will sweep off all the people sitting on the roof of the train" (Singh 161). Hundreds of Muslims who are to be massacred are from the same village Mano Majra – where they have lived in harmony for decades.

Men and Masculinity in Postcolonial Mano Majra: Masculinity as Biopolitical Tool

Colonialism itself is a masculine venture based on phallocentric discourses and principles of domination. In *Imperial Leather*, Anne McClintock tells

us of Columbus' depiction of the earth as a woman's breast, evoking the "long tradition of male travel as an erotics of ravishment" (McClintock 22). *Train to Pakistan* starts with Mano Majra's regular dependence on the harmonious movement of trains from Lahore. The train conveys a phallic imagery – as if, the agro-based, fertile village needed the masculine touch of colonial civilization. Gradually, the movement of the train works as a biopolitical technology to frighten the local people's consciousness, including its transformation into a death-train full of corpses.

In *Train to Pakistan*, Masculinity works as a biopolitical apparatus by which male body is manipulated to keep the colonial power intact. Colonialism is generally understood to be a 'masculine adventure' that has a gendered and sexualized nature. Colonialism itself is a highly gendered process where "gender is 'an integral part of the mechanism through which power settles a given population onto a given territory through a given set of administrative structures and practices" (Mohr 202). Biopower is imposed on men to discipline their lives and thoughts. *Train to Pakistan* shows how men in Global South become victims of neocolonial subjugation. They are disciplined in two ways – firstly, in direct ways by means of bodily violence such as rape, imprisonment etc, and secondly in indirect ways by means of phallocentric, hegemonized discourses like the construction of masculinity.

In *Train to Pakistan*, male body is vividly used as colonial subject. Men of Mano Majra are strategically caught in a biopolitical regime. Usually a colonial state is roughly built as a power-structure operated by men. Men's position in biopolitical regime depends on the "forms of subjectivation as part of which the male subject is made to govern itself in line with the disciplining and management of populations" (Mohr 203). For example, native men's bodies and their masculine features are targeted to penetrate feminine spaces (e.g. agricultural Mano Majra) or to stereotype the Mano Majra men to be either hyper-libidinous or effeminate. Remarkable and embarrassing instances from the novel are seen when the sub-inspector humiliates Iqbal by ordering, "Take off your pyjamas!" (Singh 68). When Iqbal does not want to conform to the regulatory attitude of the police station, the sub-inspector slaps his khaki trousers with his swagger stick. Not only that, Iqbal is treated as effeminate by the 'ultra-masculine' treatment of the law enforcers, who are actually the mouthpieces of the repressive colonial regime. This brings to the discussion towards identity formation based on masculine features. Men's biological organ (phallus) is considered as the marker of one's identity as Muslim or Hindu. Gayatri

Spivak would call this mechanism of religious segregation as "strategic essentialism". The police members undress Iqbal to check his (circumcised) genitalia only to declare him as Iqbal Mohammed and accuse him as a Muslim Leaguer. But, in the face of degrading political tension, he is freed as Iqbal Singh, a Sikh. Iqbal wonders how a man's "foreskin" can determine his life or death. Not only that, Iqbal is 'made' to be grateful towards the police authority because his constructed Sikh identity saves his life in turbulent Mano Majra. This treatment towards Iqbal works as an example for the rest of the men of Mano Majra to frighten and dominate them.

Torture of male body during postcolonial partition can be relatable with the concept of "body politic". Referencing from the biopolitical regime of medieval age, the king's body was divided into two political entities – 'body natural' and 'body politic'. The scenario is not different in postcolonial context, where male body works as a significant manifestation of the state's body politic. Body politic is conceptualized as "the incarnation of the power of the society in the person of the sovereign" (Flynne 71). Body politic is the object or subject through which the state power becomes visible and also, is exercised. According to Foucault, the doubling or duplication of the authorial body increases its power. Thus, the king's or authority's power is no longer limited to its own body, the power is constituted in socio-political realities, expanding to a powerful regime. Evidently, the male body as body politic can also represent a nation marked and gendered by neocolonial, internal authority. Wounded or emasculated male bodies of a country, as Kavita Daiya observes, would work both as "witness and victim of the violence of nations and nationalisms" ("Postcolonial Masculinity"). In *Train to Pakistan*, there are several instances of manipulation of male bodies to sterilize the nation. Magistrate Hukum Chand recalls newlywed Sundari's gang rape by a mob of Muslim men, who first chopped off her husband's penis. Infliction of pain and torture in the prison is performed on male organs. The sub-inspector terrifies Jugga in the jail, "You want to be whipped on your buttocks or have red chillies put up your rectum before you talk?" (Singh 79). Jugga remembers how a prisoner's testicles are twisted and squeezed by the police inspectors till he goes senseless with pain. Violence inflicted on male bodies in the public sphere is clearly an open exhibition of colonial biopower. On further accounts, the strategic disposal of Indian men (e.g. the trainload of dead men) deprive the females of Mano Majra of male support. At the end of the novel Nooran finds out, though unexpected, that she is pregnant with Jugga's child. But she fears that the

child, having a Sikh father, might be killed in the hands of Muslims in Pakistan. Thus, power exercised over both men and women marks the failure of nationalism too.

Another inevitable area of discussion is the reference to bodily violence like rape. Violation of female bodies validates male power. Mano Majra is portrayed as a village of naïve, innocent men basically with no knowledge of the anticolonial struggles of the time. Here, men are mostly illiterate, poor peasants, with criminality or 'dacoity' as illegitimate means of survival. The social production system leaves a little scope for working class men to perform their masculinity. In colonial biopower-regime, working class native men are doubly colonized. So, they exercise their masculinity on other spheres that include "command over women in all matters, and, in particular, sexual control" (Kimmel *et al.* 103). In this already existing patriarchal culture, vengeance towards enemies is performed either by erotic violence, or by ravishment of their womenfolk, e.g. mothers, sisters and daughters. The young Sikh soldier's plan of violence upon women, "for each woman they abduct or rape, abduct two" (Singh 157) is justified as an integral part of masculine warfare. On further instances, Nooran talks about Jugga's sexual aggression – "You are just a peasant. Always wanting to sow your seed" (Singh 15). Nooran's conceptualization of Jugga's masculinity is relatable to Peruvian sociologist Anibal Quijano's conception of 'coloniality of power' where men, knowingly or unknowingly, participate in the 'coloniality of masculinity'. The demonstration of masculine power is determined by religion, class, race and other intersectional dimensions. Sikh Jugga is portrayed as sexually active, whereas Muslim men like Imam Baksh are considered as weak and impotent. This makes sense of the inter-ethnic romances in the novel. Muslim women act as the passive sources of heroism for the Hindu male lovers. Hukum Chand is not bothered about the upcoming massacre as much as he is bothered about Haseena Begum's security, and Jugga lays down his own life when it comes to Nooran.

Masculine valor in *Train to Pakistan* is not only presented by concrete actions, but also by the ideological construction of masculinity. Masculinity serves as the biopolitical tool of the state to instigate racism and inter-communal riot in Mano Majra. In Iqbal's words, India is the home of "phallic worship and the son cult" (Singh 48). The diction indicates the patronymic consciousness of Indian people. Poststructuralist psychoanalyst Jacques Lacan would call this linguistic order as 'symbolic order' which is also essentially phallocentric. For example, *Train to*

Pakistan holds linguistic apparatuses that have suggestions of gendered violence. The phraseology follows from different parts of the novel - "son of fornication", "seducer of women", "pig's penis". Evidently, the native construction of masculinity is associated with violence, sexual power and abuse. Colonial authority takes this as a weapon of forming nation-state, which is clearly an attack on their hundred years of brotherhood. For example, the local concept of being a man or "*nar admi*" is replaced by violent strategies – that a liberation war should be men's war. "*Nar Admi*" or he-man, according to Singh, is someone who defies institutions or authority but stays faithful towards his fellow brothers. British rulers target this community feeling by turning them against each other. Robert Morrell and Sandra Stwart talk about deadly forms of interpersonal violence in Global South postcolonial context: "violence is an affirmation of their collective being, a rejection of the modern, an affirmation of their past" (Kimmel *et al* 106). The sub-inspector claims that Sikhs can talk only, because they have "lost their manliness". The young Sikh soldier re-enacts this sentiment against the village men to avenge on the Muslims. He manipulates the Sikh villagers by asking, "What sort of Sikh are you? Potent or impotent?" (Singh 156). Violence is considered as the only means to re-assert the Sikh people's masculinity. To prove their "manliness", they ally with criminal Malli for the bloodthirsty revenge by killing the Muslims of Chundannagar refugee camp, who are about to set for Pakistan by train. Thus, they had to re-claim their masculinity even at the cost of communal feeling. But the arrogant village badmash Jugga is stripped off his masculine ego when he learns that his Muslim lover Nooran will also be in the train. Jugga starts to cut off the rope over the train's roof in order to save Nooran, but he falls off and is killed tragically. It is equally significant and ironic that it is the body of Jugga that ensures the safety of Muslim refugees going to Pakistan; it does so only through the dematerialization of his body. The train rolls over Jugga's body and heads to Pakistan, symbolizing the partition of masculine body as well as of India itself. This moment consequently marks the self-destructiveness or 'autophagy' of masculinity that more or less, parallels to the retreat of the colonial British authority.

From colonial to neocolonial world, biopolitical regime forms into necropolitical regime that puts its subject under the hegemonized, passive threat of death, evident from Imam Baksh's words during migration to Pakistan, "Those who stay behind are killed" (Singh 136). Now subordination is rooted in alleged need to avoid death. Foucault's conception of the "right to kill" shifts towards Achille Mbembe's

"becoming subject"; because the subject's confrontation of death assures the political logics of so called neoliberal governance. In postmodern context like today, necropolitics dismantles the bodily borders of life and death. Muslim Nooran's unborn baby by a Sikh father symbolizes the emergent, transcultural nation-state Pakistan, which will simultaneously carry the wounded past and face the future struggles of neocolonial world. Thus power operation goes beyond the borders of nations or mere physical (male) body of the subject, towards an ultra-globalized form of violence.

Notes

Panopticon : a metaphor derived from architecture coined by English philosopher Jeremy Bentham. Panopticon was used to ensure surveillance and discipline that involved a controlling gaze of the authority.

Governmentality: A neologism first conceptualized by Michel Foucault, it refers to the political rationality of an existing government, or, the "art of government"; also defined as the "conduct of conduct," or an attempt to shape human conduct by calculated means. Governmentality is a way of thinking whose purpose is to secure the "welfare of the population, the improvement of its condition, the increase of its wealth, longevity, health, et cetera" (Burchell 100)

The thanato-politics: politics of death; thanatopolitics stands as an oppositional force to biopolitics, but it ironically involves a life-in-death situation that lets people 'die' in order to 'live' where "death becomes a consequence, a necessary part of living" (Murray 204)

Necropolitical : derived from 'necropower' or the power of death; Necropolitics refers to a political system that decides who should live and who should die, as Achille Mbembe notes, "Politics is therefore death that lives a human life" (Campbell and Sitze 164)

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The Cry of a Modern Man: Estrangement, Isolation and Fragmentation in *Seize the Day* and *Death of a Salesman*

Jakiya Sultana

Abstract

This study attempts to identify similarities between the protagonists, Tommy Wilhelm of *Seize the Day* by Saul Bellow and Willy Loman of *Death of a Salesman* by Arthur Miller, from a psychoanalyst point of view. Both Bellow and Miller belong to the same literary period; they share similarities in their characterizations and storytelling techniques. The problems of modern existence have often been the central concerns in their work. Both have focused on the plight of modern men and the problems they encounter in their lives. This paper aims at providing a detailed psychological analysis of the minds of the two protagonists and examine the reasons behind their anomalous behavior. The paper will also deal with how the other external social forces determine their choices and affect their decision-making.

Key Words: materialism, alienation, American dream, frustration, modern society

Arthur Millar and Saul Bellow are the two great writers of modern American literature. Both were born in 1915 and died in 2005, and were second-generation Jewish immigrants who brought new literary trends to American literature. While Millar was famous as a dramatist and Bellow as a novelist, they have represented their age, culture and society in their work with equal power and understanding. They both had a keen sense of reality and did not hesitate to portray life as they saw around them. Post WW II American literature experienced a significant change as, at that time, the writers started to draw their characters in significantly different ways than their predecessors. "Now the individual is as 'alienated' character that does not belong to any group or society and this character's biggest problem is his loneliness." (KFA) The literature of this time is characterized by the portrayal of a generation lost in bewilderment, confusion, and disillusion. The destruction caused by the war created a sense of loss, as the individuals created within themselves, making people

even more self-centered and a part of declining humanity. The literary works also reflected the futility of the American dream with all its commercial undertones. Though this dream made people work hard and invest their last drop of energy, it also made them intolerant to failures. Writers like Arthur Millar and Saul Bellow, as part of the post-world war literary circle, have portrayed the overwhelming hysteric situation of the whole nation in their works in a very realistic way. Miller, who believed that a drama should "help us to know more and not merely to spend our feelings" (Corrigan qtd. in Emami 354) has created Willy Loman as a representative of the modern man with all his problems and sufferings. Bellow shared the same ideology with Miller and created Tommy Wilhelm as another model of the modern men suffering endlessly in a modern urban American society.

Willy Loman and Tommy Wilhelm both represent modern men in an adverse society. They both are part of the opposite stream that does not match the norms of society. They are similar in their deplorable condition as human beings. Both of them are middle-aged, have lost their jobs and are considered failures in the eyes of society. Both of them think that physical attractiveness is essential for worldly success. Loman is so absorbed in this belief that he advises his son Biff to care about his looks rather than how he behaves. He says: "Because the man who makes an appearance in the business world, the man who creates personal interest, is the man who gets ahead. Be liked and you will never want" (Miller 21). Likewise, Wilhelm is a good-looking man who wanted to build up his career as an actor in Hollywood as he thought it would give him the chance to become famous and wealthy overnight. He fails in the screen test and barely survives as an extra. Like Loman, he loves to live in a world of dreams which promises future happiness, but in reality, it frustrates.

Modern society does not have any tolerance for mistakes. It only cherishes the person who is successful and condemns the one that fails. In both *Death of a Salesman* and *Seize the Day,* we meet two equally unsuccessful men who are utterly rejected and looked down upon by society. Both Wilhelm and Loman take wrong decisions throughout their lives. Loman has chosen the wrong profession. As an upholder of the American dream, he declares: "I'm the New England man. I'm vital in New England." (Millar 4) However, the truth is entirely the opposite. He is not successful as a salesman and is not well-liked and praised by his boss or other customers. His payment is also very irregular. And he is not successful

even as a father. Throughout his life, he has misguided his sons who, according to Miller, are "lost" and "confused" (136), and have learnt to dream like their father but do not fully understand how to achieve it and make it real. Loman's misguidance destroys his elder son Biff whom he loves very deeply. When the play starts, Biff is already unsuccessful and frustrated like his father. Loman has implanted in him the American dream so firmly that he (Biff) cannot settle in any job and leads an aimless life. He knows he does not fit in the business world and longs to work on a farm but suffers from uncertainty as his father dreams so high about him. His other son, Happy, seems to be happy in the literal meaning of the word, showing that he will also suffer in the future because he believes in his father's ideologies. Through Willy Loman, Miller tries to point out the inevitable mistake that every modern man commits by confusing professional and family values. Thus he works as a social reformist protecting and reforming the society. Philip Gelb once termed Miller as a prophet, calling him as a writer who "warns us of the possible bitter harvest that may be reaped from our present limited way. . . and he dramatizes the problems and the need for individuality and will" (63). In his works, Miller never fails to attack the wrong moral and ethical decisions modern men make and shows the bitter consequences in a sympathetic but truthful way. So, in the drama, we find Loman, who thinks he can get both professional success and the respect of his family by upholding the long but falsely held belief in the American dream, suffers to such an extent that he takes his own life. In *Seize the Day*, Wilhelm has numerous flashbacks which prove that he has made the same mistakes in his life. He wanted to be an actor despite the objections of his parents. He married the wrong woman, Margaret, who cares more for his money than his love. Wilhelm cares too much for his father's conceptions of him and tries hard to be liked by him. His last mistake is investing his last saving to Tamkin, which leaves him completely lost. The inability to take the right decisions leaves both men guilty, increasing their alienation and separation from the rest of mankind.

It is to be noted that both the stories end in tragedy. *Death of a Salesman* ends with Loman's death as he commits suicide, hoping to benefit his family one last time by the insurance money. But by committing suicide, he turns out to be "a revolutionary hero who puts under question the capitalistic system of society." (Imami 354) Loman has indeed spent his entire life living in the society following its values and ideas. He even goes further to teach his sons the same ideology. At the end of his life, he realizes that these values of society are nothing but lies and attempts to

defy them and does what is within his control- take his own life. His death is his final desperate attempt to do something unique for which he will be remembered.   In *Salesman in Beijing,* Miller defines Loman as "extraordinary in one sense at least--he is driven to commit what to him is a consummate act of love through which he can hand down his selfhood, his identity" (190). It is through his death that Loman becomes the suffering modern man. In *Seize the Day,* Wilhelm does not die physically but suffers spiritually. He dies every single day in his attempt to be something which he is not. He pretends to be a culturally sophisticated modern man well-liked and praised by everyone, though, in reality, he is lonely and desperate to find his own place in the world. He cannot adjust himself with the urban materialistic culture of New York anymore. Despite wearing modern and trendy clothes, there is a hollowness in his personality. He feels suppressed and uncomfortable. He declares: "New York is like a gas. The colors are running" and complains: "My head feels so tight. Dad I can't take city life anymore and I miss the country". (Bellow 50) Thus, Wilhelm appears like an animal in a cage, unable to bear his situation and escape from it.

Both Wilhelm and Loman are victims in a modern materialistic society where only money gives power and identity to an individual. In *Seize the Day*, Wilhelm's victimization begins with his relationship with his father, Dr Adler. His father refuses to take care of him because he considers his son as an economic failure. He disowns him as he will not share his already acquired wealth and reputation. Bellow identifies it as a capitalist behavior as he says; "The fathers were no fathers and the sons no sons." (84) Wilhelm can be called a true representative of the American dream for his obsession with material and worldly success. Like a dreamer, he gets into different professions to get quick successes. Bellow comically describes him working as an assistant in Los Angeles hospital, a sales representative, a ditch digger, an office boy in the pacific theater, stock market investor and a public relations man in his earlier life, and when the story opens, we come to know that he is going to invest his last saving in the commodity market at the suggestion of his surrogate father Dr. Tamkin. Wilhelm is not alone in his race of worldly success as every character of this novel seems to participate with him. Like most modern men, he suffers from a conflict between aspirations and inability in his mind which keeps him restless in his professional life. The society in which Wilhelm lives cannot see through anything of a man other than his material success, and money is the only thing that is considered necessary to bring happiness in one's life. Bellow defines the money concerned

materialistic society in these words "They adore money! Holy Money! Beautiful money! If you did not have it, you were a dummy." (36) Thus, Bellow to portrays Wilhelm as a man who dislikes money culture but becomes materialistic like others. Likewise, in *Death of a Salesman,* Loman is a suffering old man who has spent his entire life in an attempt to earn money and prestige. Still, the materialistic society is too heartless to acclaim or recognize him as a human being. He finds out with great pain that people of a good personality or high moral values are no longer what society looks for, and money is the only thing that matters. A person is valuable as long as he sells himself well. So, when Loman realizes that he has nothing to sell, he sells his life. He dies because it will bring 20000 dollars to his family. Emami describes Loman as a "consenting hero, one who in seeing the uselessness and futility of opposing society, throws away all his ideals and does not rest his hope in the future." (354)

Both Wilhelm and Loman long for solid and affectionate human relationships with their families but fail to achieve them. Wilhelm fails to have a happy marital relationship with his wife based on love and respect. Failing this, he tries to get a divorce from her. In the play, he talks with his wife just once over the telephone, and the subject is again only money, not love. Though he loves his sons, he is forced to stay away from them. He childishly craves for his father's affection, who disowns him in fear of losing his wealth. As a result, he rushes to Tamkin despite him being a suspicious character. He declares: "At least Tamkin sympathies with me and tries to give me a hand, whereas Dad does not want to be disturbed." (Bellow 11) It is the lack of familial bonding that makes him more vulnerable and frustrated in a cruel world. Likewise, in *Death of a Salesman*, Loman, though he has a family with a loving and caring wife, fails to achieve a healthy relationship with her as we come to know from his flashbacks that he had an affair with another woman in Boston and there is a sense of secrecy in his relationship with her. Linda- his wife, also fails to understand him and does nothing to stop him from his tragic death. She is too passive to take action though she knows that Loman has lost his job and plans to commit suicide. When the play starts, the father and son are no longer in a good relation as Biff, who has seen the harsh reality of the world, clearly understands the futility of his father's dreams. Being disillusioned, Biff declares: "You were never anything but a hard-working drummer who landed in the ash can like all the rest of them! . . . Can't you understand that? There's no spite in it anymore. I'm just what I am, that's all." (Miller 11) Loman's failure as a father makes him rethink of his past life, and he takes a psychological journey where he remembers

the events of his praising Biff for borrowing a football to practice with but never returning it. He recalls advising his sons to steal sand from the nearby apartment building to rebuild their house without realizing how much he has affected and harmed his sons' personality. Loman has always given his family more priority than anything else. His suffering as an abandoned child makes him too attached to his sons, but he fails to provide them with proper training and guidance. He lacks confidence and needs constant assurance from others to ensure he is doing well as a man and father. He has a hallucination of his dead brother Ben and confesses: "Oh, Ben, that's good to hear!" and adds, "Because sometimes I'm afraid that I'm not teaching them the right kind of--Ben, how should I teach them?" (Miller 159) His failure reflected on his sons makes him even more tormented and hastens his tragic death.

Much of modern literature shows men as broken and frustrated who lead a complicated life of insecurity and chaos. Most men take this life for granted, but few attempt to break through the chains that control them. Nevertheless, they fail to achieve the freedom and independence that they crave for. As a result, they suffer more. This unheard cry of a modern man is heard when Linda talks about Loman's deplorable condition as an old, materially unsuccessful man. She says: "Willie Loman never made a lot of money. His name was never in the paper" and further adds remorsefully: "He's not the finest character that ever lived. But he's a human being, and a terrible thing is happening to him. So attention must be paid. He's not to be allowed to fall in his grave like an old dog." (Miller 40) Linda's concern for Loman is not only about her husband but for all the materially unsuccessful modern men who struggle hard but suffer from depression and mental breakdown. In *Death of a Salesman*, Miller has portrayed a post-world war America where paranoia is widely prevalent. Their pessimism results from their keen sense of painful existence and their inability to escape from it. In *Seize the Day*, we find almost the same scenario where Bellow describes Wilhelm's situation thus: "The spirit, the peculiar burden of his existence lay upon him like an accretion, a load, a hump, in any moment of quiet, when sheer fatigue prevented him from struggling, he was apt to feel this mysterious weight, this growth or collection of nameless things which it was the business of his life to carry about. That must be what a man was for." (14) The modern world invests its energy and concentration on money and worldly commodities and does not care for humane and genuine emotions. It rarely sees human beings as they are and considers them just another tool to be employed and exploited. Modernity makes man self-conscious and independent, but it

also makes him self-centered and responsible to none, which ultimately makes him a slave to his vaulting ambition and breaks the chain that connects him to his culture and society.

Both Miller and Bellow were deeply conscious about the psychological complexity of the modern man whose mental trauma is heightened by a sense of alienation and separation from society and humanity as a whole. In *Death of a Salesman,* every character suffers more or less from alienation. For Miller, Loman is the most alienated character who suffers as he does not belong to anybody. He grew up without a father figure and a brother who exists more in his imagination than in reality. Later Loman's inability to succeed as a salesman makes him even more isolated from himself. He is so lost in his mind that he keeps having dreams or hallucinations where he sees his dead brother and talks with him. He asks his dead brother's advice on how to become successful. He realizes that he does not dare to talk to any living body as he declares: "Let me talk to you- I got nobody to talk to." (Miller 93) Beneath the optimism about his life, another layer of his mind is crowded with the consciousness of his failure and disbelief of his ideologies. That is why we find him cheerful, merry and hopeful at one moment and gloomy and cutting in the next. His personality is torn between these two states, making him even more isolated and separated from others. What is unique about Bellow is his role as a modern storyteller. Ruth Miller, who wrote his biography, said: "Bellow's special value for his readers is his ability to speak their 'secrets' openly: He is a sort of 'proxy' of the spirit, a memorialist of a rapidly fading America" (qtd. in Oates). *Seize the Day* is not an exception. In the novel, alienation of modern man from the outer world is one of the main focal points. In the novel, Wilhelm is an utterly isolated person without any power over the materialistic world where money defines everything. When the story opens, Wilhelm is jobless and greatly dependent on others financially. Though he has several conversations with other characters, he never truly opens his heart to anybody as Bellow declares: "None of these could be mentioned and the great weight of the unspoken left them little to talk about." (6).

Wilhelm's isolation in *Seize the Day* comes from his realization of being used and left over by others without compassion or sympathy. In modern society, a man is considered a commodity and is used and taken care of as long as found valuable until everything is taken away from him and left unsupported and destroyed. Wilhelm realizes that throughout his life, he is repeatedly used and consumed by others. After being cheated by Dr.

Tamkin, he remorsefully declares: "I was the man beneath: Tamkin was on my back and I thought I was on his. He made me carry him too, besides Margaret, like this they ride on me with hoofs and claws. Tear me two pieces, stamp on me and brach my bones." (Bellow 22) The image of a howling wolf that Bellow uses to indicate the spiritual isolation that Wilhelm feels from the rest of the world is very suggestive as it indicates the self-awareness of an isolated person. Later Wilhelm calls himself a "Fair-haired hippopotamus" (Bellow 14), marking his inability to communicate with the human world and society itself. As set in a modern urbanized world, *Seize the Day* thus portrays the dilemma of a modern man who "is trapped in a society which determines his way of life and philosophy of being" (Noorbakhsh and Omrani 255). In *Death of a Salesman*, Loman's isolation and later death spring from his inability to confront society and its norm. A modern man is constantly at war with society and established cultural standards, as we see "Willy is shown as a character who opposes the values of his society when he finds out about their shallowness but, put under pressure by the society, he learns at the end that he has to consent" (Emami 356). The more Loman tries to cope with societal norms, the more he is isolated and strangled in its chains. Loman has spent his life performing his dream profession. He vainly conceives that his profession has dignity as he performs his duty with hard labor and dedication. However, when the time comes to get paid and recognized, he gets nothing. So being frustrated, Loman utters: "You can't eat the orange and throw the peel away- a man is not a piece of fruit" (Miller 61-62). Thus, both Wilhelm and Loman are the helplessly unreasonable modern men who suffer endlessly in the modern materialistic society.

Both Miller and Bellow have tried to give a realistic presentation of the post-world war II American society where apart from the positive aspects like prosperity and development and negative aspects like depression, fragmentation and a deep sense of confusion prevails. Both of the writers wanted to look at the dismal picture of modernity and examine how it was gradually affecting and destroying the psychology of the modern man. While modern society emphasizes individualism, it forgets that too much practice of it will leave people alienated and robotic. Both Miller and Bellow took two middle-aged men as the epitomes of modernity. Their psychological dilemma and behavior work as a canvas for Millar and Bellow, where they put their color of imagination to depict the grim reality of modernity. Both Willy and Tommy cry as the burden of alienation as well as separation is too much for them. However, their cry is never taken

seriously in their world. Nobody feels sympathetic toward them. Both Miller and Bellow seem to indicate that there are hundreds and thousands of Wilhelms and Lomans around us who face the same predicament every day. Some commit suicide like Loman, and others keep living the same old life of despair and failure. Though Bellow ends the novella positively as Wilhelm finally starts to feel a connection with humanity by crying for the unknown dead man, the image of his dead romantic self, not everyone is fortunate like him. Most modern men end their lives without even knowing that there are ways to be happy, and happiness does not always necessarily come with money.

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Do SFA and DEA Methods Provide Similar Efficiency of Potato Farming?

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Abstract

The Government of Bangladesh has been trying to encourage potato consumption to reduce pressure on rice consumption and earn foreign currency. It is necessary to use farmers' resources and current technology more efficiently to meet the demand. This study evaluates farm-level efficiency and inefficiency of potato farming by estimating technical allocative and economic efficiencies using Cobb-Douglas SFA and the input-oriented DEA method. This study collects noncommercial potato farm-level cross-section survey data from purposively selected two districts Brahmanbaria and Narsingdi. The results show that the efficiency score of the SFA model is higher than the DEA model, which implies that the SFA frontier fits data tighter than the DEA frontier. SFA and VRS DEA are almost similar in the case of estimated technical, allocative, and economic efficiencies. In the case of DEA, VRS TE enveloped data more closely than CRS TE. Assessing efficiency suggests significant economic, technical, and allocative inefficiencies in potato farming and scope to increase potato production levels through efficiency improvement. Inefficiency analysis shows that Infrastructure and socio-economic factors jointly influence potato production variability. Estimated results of efficiency and inefficiency factors from both the methods are not the same, which implies a difference in the estimation of the two different methods. The results are not robust but in the same direction. Stochastic Frontier Analysis is more applicable to the agriculture sector since the owner cannot control the random error in this sector. To achieve efficiency in production, the government needs to pay attention to improve allocative and economic efficiencies and emphasize choosing the appropriate technology and efficient use of resources for the scale of operation.

Keywords: Potato Farming, SFA, DEA, Efficiency, Inefficiency

1. Introduction

Nowadays, developing countries' agricultural farming efficiency has been a topic of considerable interest in development literature. Its estimation

has been an area of interest for economists. Efficiency is a performance measure and success indicator. The efficiency studies show the possibility of productivity raising through efficiency improvement without introducing new technologies or increasing the resource base. Farming efficiency of the agriculture sector is considered an essential factor in balancing population growth and agricultural output (Food and Raw materials). Inefficiency estimations help in taking a decision to raise productivity, whether through efficiency improvement or introducing new technology. In Bangladesh, potatoes have become a cash crop, and their importance is rising rapidly in the domestic and international markets. The Potato sector is now a growing Government policy concern.

There is a "Quiet Revolution" in potato production in Bangladesh (Reardon et al., 2012). It is ranked just after rice and wheat, considering the harvested area, production, and consumption. Bangladesh ranked the 4th position for production area (ha), the 3rd position for production volume (MT), the 4th position for production yield (tones/ha), and the 3rd position for consumption (kg/capita/year) in Asia. The rank position of Bangladesh is increasing in world potato production. It was ranked the 9th in 2005, becoming the 8th in 2012, and the 7th in 2014 (FAO, 2014). Farmers cultivate local and High Yielding Varieties of Potatoes in Bangladesh. So far, scientists have invented 61 types of potato varieties. In 1961 potato production was 0.3 million tons. Potato production increased by 0.9 million tons by 1980, 1.1 million tons by 1990, and 2.9 million tons by 2000. After that, potato production sharply increased by 7.9 million tons over the next ten years (Development Bank, 2012a). Higher yielding and more profit-making opportunities encourage farmers' interest in potato cultivation. Farmers prefer to cultivate the Diamant variety for its higher production than other varieties (M. M. Hossain et al., 2016). According to BBS estimates, during 2013-14, the potato was grown in an area that covered about 1,141 thousand acres of cultivable land 2013-14, out of which the local variety covered 182 thousand acres, and the High Yielding Variety (HYV) covered 959 thousand acres of land. Local variety production increased by 2.86%, and HYV increased by 4.15% from 2012-13 to 2013-14, which shows that farmers are interested in growing higher-yielding varieties. Bangladesh exported about 0.2% of its potato production. Consumption of potatoes was 23kg per capita per year in 2011(Development Bank, 2012). According to HIES-2010, potato's per capita per day consumption increased by 7 grams in 2010 over 2005. Average per capita per day potato intake was 70.3 grams, 71.5 grams, and 66.7 grams in national, rural, and urban levels, respectively. Potato can be

a cheap energy source as we get 68.2 k—calorie of energy per 100gm of potato. Farmers' farming efficiency is an important tool for optimizing production decisions and strengthening the farms' capacity to face increasing input costs, changing market conditions, rapid technological progress, and economic hardships to reach optimum output level.

Guesmi (2013) suggests that efficiency can improve economic competitiveness and performance and promote sustainable economic practices and economic development. It is necessary to undertake research efforts to estimate the efficiency of potato farming to ensure better ways and sustainably improve potato productivity. Farmers need to improve their farming efficiency to achieve financial success and profit. There are variations in resource use efficiency of different farms. Resources should be utilized optimally to reach the maximum level of output and income. Farms' decision about raising farming efficiency depends on identifying inefficiency factors. Therefore, policymakers may give more emphasis to the improvement of efficiency. It is important to assess the efficiency of potato farming to find out the potential and possibilities for expansion and sustainability of potato production in Bangladesh.

There is little information about the economic, technical and allocative efficiencies of the potato sector in Bangladesh. Most studies estimate technical efficiency using Stochastic Frontier Analysis (SFA). Some studies (e.g. Wadud & White, 2000; Wadud, 1999 and M. A. Wadud, 2003) estimate economic, technical, and allocative efficiencies in the agriculture sector using Data Envelopment Analysis (DEA) and SFA and (Chowdhury, 2007) in the rice sector of Bangladesh. There are several studies on comparison between DEA and SFA for different crops in different countries. Such as M. K. Hossain et al., (2012), Johansson, (2005), Islam et al., (2014), Madau, (2012), Umar H.S. et al., (2017), and (Abdulai et al., 2018). To the best of our knowledge, no research has been done yet on potato farming efficiency using both SFA and DEA. This study attempts to fill this gap by doing a comparative study among different potato farms using both DEA and SFA.

The study's objectives are to estimate the economic, technical and allocative efficiency and inefficient factors of potato farming and how inefficient factors influence the potato farming efficiency level of the study area. Farmers' farming efficiency depends on their level of education, years of experience, land fragmentation, use of seeds, modern technology, fertilizer, and other inputs. Potato farmers of the country may get valuable insights from the knowledge of different types of efficiency.

This study emphasizes utilizing allocated resources efficiently in potato farming which may help to improve the prevailing situation through developing policy parameters. It determines efficiency level and identifies factors affecting the efficiency of potato production. This study will describe potato farmers' socio-economic characteristics; evaluate the economic, technical, and allocative efficiencies of potato farming in the sample area. The study's objectives are to estimate the potato farming efficiency (economic, technical, and allocative efficiencies), identify the explanatory factors of potato farming efficiency, and find any significant difference between the efficiency results of SFA & DEA methods.

2. Methodology

2.1 Sampling and data

Bangladesh has temperate weather (temperature $15^0 - 21^0$ C), which is suitable for potato cultivation in most of the districts in the country. This study collected cross-section data randomly from 100 individual farmers using a semi-structured questionnaire. This study selected two districts purposively among the noncommercial potato-grown areas Brahmanbaria and Narsingdi.

This study collected the following variables from the survey: Land (Decimal), Output (kg), Seed (kg), Tilling (Tk.), Cost of Labor (Tk.), Irrigation (Tk.), Fertilizer (Tk.) Vitamin (Tk.), and Pesticides (Tk.), in thousand. Inefficiency factors are Education (year), Age (year), Experience (year), Training (dummy), Access to credit (dummy), Land fragmentation (average plot size), Weed uprooting cost (Tk.), Household size (number of family member), and Cold storage facility (dummy).

2.2 Methods of estimation

Farrell's (1957) pioneering article of efficiency measurement helps develop different efficiency analysis methods. SFA and DEA are mostly used in efficiency-related research work worldwide. Generally, SFA is used to assess the performance of the agricultural sector. DEA is used to estimate the efficiency of the non-agricultural sector, e.g., public utilities, banks, hospitals, education institutions, etc. However, the number of research carried out using DEA and SFA methods for crops. This research employs the SFA and DEA methods to estimate two districts' efficient and inefficient determinants. Two methods are discussed as follows:

2.3 Stochastic frontier analysis (SFA)

Aigner et al., (1977)and Meeusen and Meeusen et al., (1977) independently suggested the stochastic frontier function, a parametric econometric method. This study applies a self-dual Cobb-Douglas SFA Method. It needs to assume a functional form for the production technology and the distribution of the technical inefficiency term. Economic, technical, and allocative efficiencies are computed from its dual cost frontier model. The Cobb-Douglas stochastic frontier specified for this study is as follows:

$$\ln \tilde{y}_i = \ln y_i - v_i = \beta_0 + \sum_{k=1}^{8} \beta_{ik} \ln x_{ik} - u_i \quad \text{(i = 1, 2... 100 number of farms)} \quad (1)$$

where ln: The natural logarithm, y: Current year total potato production, x_1: Land, x_2: Labor, x_3: Tilling, x_4: Seed x_5: Fertilizer, x_6: Irrigation, x_7: Pesticide, x_8: Vitamin

β_0: Technical efficiency level, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$: Coefficients of inputs concerning output level, v_i: The random error that farmers cannot control (weather, pests, diseases, measurement error in the output variable, etc.), u_i: The non-negative random error measures the technical inefficiency relative to the stochastic frontier. $u_i = 0$ means the farm lies on the Stochastic Production Function and $u_i > 0$ represents inefficiency in the farm. Cov(v_i, u_i) =0, and also Cov(v_i,x)=0 & Cov(u_i,x)=0. $\tilde{y}_i$: The farms observed output adjusted for the stochastic random noise captured by v_i.

The variance parameters of the model are expressed as:

$$\sigma^2 = \sigma_v^2 + \sigma_u^2 \qquad \gamma = {\sigma_u^2}/{\sigma^2} \qquad \text{and} \qquad 0 \leq \gamma \leq 1$$

$\gamma = 0$: absence of stochastic technical inefficiency when stochastic frontier model becomes a average frontier model.

$\gamma = 1$: The stochastic random error term is absent when the stochastic frontier model becomes a full frontier model (D. J. Aigner & Chu, 1968).

The parameter $\lambda = \sigma_u/\sigma_v$: a measure of the comparative variability of two inefficiency sources. **when $\lambda^2 \to 0$**, it implies that $\sigma_v^2 \to +\infty$ and /or $\sigma_u^2 \to 0$, which means that the random shocks dominate in explaining the inefficiency. When $\sigma_v^2 \to 0$ then, the gaps to the frontier are due to technical inefficiency.

The i-th farm-specific technical efficiency is the ratio of y_i and y*, given the input levels.

Which is:

$$TE_i = \frac{y_i}{y_i^*} = \frac{f(x_i,\beta)e^{v_i-u_i}}{f(x_i,\beta)e^{v_i}} = e^{-u_i} \qquad\qquad (0 \le TE_i \le 1)$$

y_i = observed output of i-th farm, y* = corresponding frontier output

u_i are non-negative truncations of the N (μ, σ_u^2) distribution and $\mu = z_i\delta_i$

where, z_i : a (k×1) vector of variables that influence efficiency and δ_i:To be estimated parameters which is (1× k) vector.

Equation (1) constitutes the basis for obtaining the technically efficient input vector x_{ik}^T. The dual stochastic frontier cost function model is analytically derived from the stochastic production model. The economically efficient input vector x_{ik}^E is derived from the dual stochastic frontier cost function.

The dual stochastic frontier cost function model is

$$C(p_{ik}, \tilde{y}_i) = \alpha_0 \prod_{k=1}^{8} p_{ik}^{\beta_{ik}\alpha_{ik}} \tilde{y}_i^{\alpha_{ik}} \tag{2}$$

where, $C(p_{ik}, \tilde{y}_i)$ is cost function

$$\alpha_0 = \left(\frac{1}{\beta_0^{\alpha_{ik}}}\right)\left(\sum_{k=1}^{8} \beta_{ik} / \prod_{k=1}^{8} \beta_{ik}^{\beta_{ik}\alpha_{ik}}\right) \qquad \text{and} \qquad \alpha_{ik} = \frac{1}{\sum_{k=1}^{8} \beta_{ik}}$$

$$x_{ik}^E = \frac{\partial C(p_{ik},y)}{\partial p_{ik}} = x_{ik}^E(p_{ik},\tilde{y}_i) = \alpha_0(\beta_{ik}\alpha_{ik}) \prod_{k=1}^{8} \frac{1}{p_{ik}} p_{ik}^{\beta_{ik}\alpha_{ik}} \tilde{y}_i^{\alpha_{ik}} \tag{3}$$

From the result of stochastic frontier production function (1), we can get the technically efficient input vector x_{ik}^T. Multiplying the observed input vector x_{ik}, the technically efficient input vector x_{ik}^T and the economically efficient input vector x_{ik}^E by the input price vector provides the observed, technically efficient, and economically efficient costs of production of the i-th farm equal to $p_{ik}x_{ik}$, $p_{ik}x_{ik}^T$ and $p_{ik}x_{ik}^E$ respectively which compute the TE, AE, and EE indices for the ith farm as:

TE = $p_{ik}x_{ik}^T/p_{ik}x_{ik}$

AE = $p_{ik}x_{ik}^E/p_{ik}x_{ik}^T$

EE = $p_{ik}x_{ik}^E/p_{ik}x_{ik}$

2.4 Data envelopment analysis model

DEA is a linear programming method. It is used to formulate a piece-wise linear surface over the input and output data points (William W. Cooper; Lawrence M.; Seiford Joe Zhu, 2004). The linear programming problems are solved for each farm in the sample to construct the frontier surface and produce the level of inefficiency. The level of inefficiency is the gap between the frontier and the observed data point. The efficient farm with an efficiency score one lies on the production frontier, and the inefficient farm with an efficiency score of less than one exists beneath the frontier (William W. Cooper et al., 2000).

 Charnes et al., (1978) proposed an input orientation DEA method that assumed constant returns to scale (CRS). Moreover, Banker et al., (1984) assumed variable returns to scale (VRS) in DEA model. Since this study considers potato, a single output and eight inputs it selects input orientation model. This model asses how much input can be changed proportionally to produce a fixed amount of output.

2.5 Technical efficiency (TE) under CRS:

$$\min_{\theta,\lambda} \quad \theta_i^{CRS}, \quad \text{subject to:} \quad -y_i + Y\lambda \geq 0; \; \theta x_i - X\lambda \geq 0, \lambda \geq 0 \tag{1}$$

Where, θ = a scalar , λ = an N×1 vector of constant, Y = M×N output matrix, x_i = input matrix of ith farm, X = K×N input matrix and y_i = output matrix of ith farm.

The θ parameter provides the technical efficiency score of the i-th farm, λ vector represent information of the peers of the (inefficient) i-th farm. When θ=1, farm is technically efficient and on the frontier. On the other hand, if θ<1, the farms are below the frontiers and are technically inefficient (Farrell, 1957). N times solved the liner program to estimate θ and λ for the individual farm in the sample.

2.6 Technical efficiency (TE) under VRS:

All DMUs have a constant return to scale, indicating that they operate optimally.

The convexity constant $N1'\lambda$ = 1 add in equation 5.5 to estimate the VRS .

$$\min_{\theta,\lambda} \quad \theta, \text{subject to} \quad -y_i + Y\lambda \geq 0, \quad \theta x_i - X\lambda \geq 0, N1'\lambda = 1, \lambda \geq 0 \tag{2}$$

N1: Nx1 vector. If TE= 1 for both CRS and VRS approaches then farms can achieve maximum output for given inputs.

2.7 Scale efficiency (SE)

An individual farm has scale inefficiency when there is a difference between CRS TE and VRS TE scores. Additional constraint $N1'\lambda \leq 1$ (non-increasing returns to scale) applied in DEA model to assess whether farm has increasing or decreasing returns to scale. So DEA model is

$$\min_{\theta,\lambda} \quad \theta, \text{ subject to: } -y_i + Y\lambda \geq 0, \theta x_i - X\lambda \geq 0, N1'\lambda \leq 1, \lambda \geq 0 \qquad (3)$$

2.8 Economic efficiency and allocative efficiency

According to Färe et al., (1994), the following DEA model needs to estimate economic efficiency.

$$\min_{\lambda, xi*} wi'x_i^*, \text{ subject to } -y_i + Y\lambda \geq 0, \theta x_i - X\lambda \geq 0, N1'\lambda = 1, \lambda \geq 0 \quad (4)$$

Where, w_i: input prices matrix (vector) for an individual farm, x_i^* obtain from linear programming, cost-minimizing matrix (vector) of input quantities from given output levels (y_i) and input prices (w_i) for an individual farm.

The economic or cost efficiency for an individual farm is

$EE = CE = w_i'x_i^*/w_i'x_i$ where $w_i'x_i^*$=the   minimum   cost, and $w_i'x_i$= observed cost

Allocative Efficiency: AE = EE/TE

2.9 Determinants of inefficiency

The following equation presents the inefficiency effects model. For SFA method, technical efficiency is calculated in a single-stage method in which the technical inefficiency effects are modeled as a function of socio-economic characteristics and infrastructure factors. The DEA method estimates inefficient effects using the Tobit regression model.

$$U_i = \delta_0 + \delta_1 Z_{i1} + \delta_2 Z_{i2} + \delta_3 Z_{i3} + \delta_4 Z_{i4} + \delta_5 Z_{i5} + \delta_6 Z_{i6} + w_i \qquad (4)$$

Where, U_i: Inefficiency, Z_1: Age (year), Z_2: Education (years of scholing), Z_3: Experience (year), Z_4: Land fragmentation (Number of plot), Z_5: family size, Z_6: Deweeding. w_i : error term.

3. Empirical Results

3.1 Stochastic frontier analysis

Table 1 shows coefficients of the estimated Cobb-Douglas stochastic frontier model using the maximum likelihood method with technical inefficiency factors.

Table 1: Estimated coefficients of Maximum Likelihood Method

Name of the variables	Parameters	Coefficients	t - ratios
Constant	β_0	4.124	3.861
Ln of Land	β_1	0.694	4.998
Ln of Labour cost	β_2	0.593	3.744
Ln of Tilling cost	β_3	0.351	5.261
Ln of Seed	β_4	0.414	9.637
Ln of Fertilizer cost	β_5	0.317	2.329
Ln of Irrigation cost	β_6	0.211	11.118
Ln of Pesticide cost	β_7	0.254	3.389
Ln of Vitamin cost	β_8	0.105	6.464
Inefficiency Variables			
Constant	δ_0	7.062	2.639
Age	δ_1	-0.531	-6.340
Education	δ_2	-0.318	-3.986
Experience	δ_3	-0.225	-4.663
Land Fragmentation	δ_4	0.229	10.195
Family size	δ_5	0.975	1.784
Deweeding	δ_6	-0.662	-8.157
Variance Parameters			
$\sigma^2 = \sigma_v^2 + \sigma_u^2$		0.089	4.045
$\gamma = \frac{\sigma_u^2}{\sigma_v^2}$		0.761	3.107
σ_v^2		0.021	
σ_u^2		0.068	
Log likelihood Value		355.718	

The empirical results show that the coefficient of eight variables are positive and statistically significant at 5% significance level. It indicates that eight variables are important to determine the potato production. The elasticity is the highest for land. Farmers are not always using their total land for potato cultivation. After the acquisition of land, the land should be prepared well by tilling may be by cow or by tractor. The farmers have to have good quality seeds no matter whether the seeds are local or HYV varieties. Without the good quality seeds, the production would be hampered since good quality seeds are prerequisite for good production. The farmers have to use good quality fertilizer no matter whether they grow locally or HYV varieties. Without the good quality fertilizer, the production would be hampered which is a prerequisite for good production. We found irrigation; pesticide and vitamin have a relatively small effect. The estimated δ-coefficients of the explanatory variables indicate that the inefficiency variables of farm significantly contribute to explain the technical inefficiency effects in potato farming. The signs of estimated coefficients tell us that these variables cause variation in technical efficiency of potato farms and affect the capability of farms in adequately utilizing existing technology and Infrastructure. The return to scale ($\sum_{i=1}^{8} \beta_i = 2.94$) indicates increasing returns to scale in potato farming. The estimated value of γ parameter is 0.76 and the variance parameter σ^2 is 0.09 in the stochastic frontier. All coefficients of inefficiency factors are statistically significant at 5% level indicating that there are inefficiency effects in the potato farming in the sample farms and the random factors of the inefficiency effects significantly contribute (0.068) in potato farming efficiency. That is the technical inefficiency effects are important component to determine the variability and level of potato production. The negative coefficients of Education, age, and experience imply farmers with more years of schooling, experience, and age are more technically efficient. Since weed hampers the potato production farmers need to de-weed their land for getting more output.

As far as land fragmentation is concerned, farmers with smaller plot size are more technically inefficient. The higher the smaller plots are managed it would be difficult to manage the land and especially irrigation and tillage would be difficult with tractor and water pump with electricity. Since farmers have got smaller pieces of lands they don't use very much technologically advanced method of cultivation. The positive coefficient of the family size implies that the higher the family size, the higher the inefficiency though the coefficient is not significant at 5% level.

3.2 Input- oriented DEA frontier

Input- oriented DEA frontiers with CRS and VRS are computed. The ratio of CRS and VRS efficiency estimates the scale efficiency of potato farming. Table 2 presents frequency distribution of farms according to technical efficiency and scale efficiency.

Table 2: Frequency Distribution (%) of farms according to technical and scale efficiencies

Efficiency index (%)	Technical Efficiency (TE)		Scale Efficiency
	CRS(Overall TE)	VRS(Pure TE)	
01-40	15	21	6
40-50	25	22	8
50-60	27	23	5
60-70	12	13	11
70-80	9	6	23
80-90	5	7	18
90-100	7	8	29
Total farms	100	100	100
Summary Statistics			
Mean	54.55	56.66	74.80
Minimum	9.80	23.20	12.0
Maximum	100	100	100
Standard Deviation	20.33	19.74	20.46

Table 2 shows that most of the farms (79%) have technical efficiency scores within (1-70) % efficiency index. Average scores of technical efficiency for CRS and VRS TEs are almost closer. 70% farms fall in (70-100) % scale efficiency index.

In terms of scale economies, 65% farms have increasing, (20%) have constant and (15%) have decreasing returns to scale. According to Eugene (1990), farms using the same technology will have increasing return to scale with relatively low output, decreasing return to scale with relatively high output and constant returns to scale when output level equal to mean output.

3.3 Estimated production, cost and input demand functions

The dual cost frontier logically estimated for inefficiency component from the stochastic production frontier. The stochastic production function and frontier cost function derived from Table 1.

Stochastic Production Function is as follows:

$$y_i = 4.124 \ x_{i1}^{0.694} \ x_{i2}^{0.593} \ x_{i3}^{0.351} \ x_{i4}^{0.414} \ x_{i5}^{0.317} \ x_{i6}^{0.211} \ x_{i7}^{0.254} \ x_{i8}^{0.105}$$

(Where i = 1, 2, 3, …, 100, number of farms)

Dual cost frontier function is logically estimated as follows:

$$C(P_{ik}, \tilde{y}_i) = 4.356 \ P_{i1}^{0.236} \ P_{i2}^{0.202} \ P_{i3}^{0.119} \ P_{i4}^{0.141} \ P_{i5}^{0.108} \ P_{i6}^{0.072} \ P_{i7}^{0.086} \ P_{i8}^{0.036} \ \tilde{y}_i^{0.340}$$

(where i = 1, 2, 3, …, 100, number of farms)

Input demand function is

$$x_{i1} = \frac{1.03 \ P_{i2}^{0.202} \ P_{i3}^{0.119} \ P_{i4}^{0.141} \ P_{i5}^{0.108} \ P_{i6}^{0.072} \ P_{i7}^{0.086} \ P_{i8}^{0.036} \ \tilde{y}^{0.340}}{P_{i1}^{0.764}}$$

(where i = 1, 2, 3, …, 100, number of farms)

3.4 Economic, technical and allocative efficiencies by SFA and DEA method

Frequency distribution (%) of economic, technical, and allocative efficiencies scores of farms are shown in the Table 3. Most of the farms 79% are technologically efficient and falls (80-100) % efficiency class while 21% farms fall (1-79) % efficiency class. In case of AE, 34% farms fall (80-100) % efficiency class, and 76% farms fall in (1-79) % efficiency class. In case of EE, 12% farms fall (80-100) % efficiency class, and 88% farms fall in (1-79) % efficiency class. Farms have considerable variations in efficiency. The calculated mean of economic, technical, and allocative efficiencies indicates that there are considerable economic, technical, and allocative inefficiencies in potato farming and rooms for production gain through efficiency improvement. It is seen that TE has highest mean value and EE has lowest mean value.

Table 3: Frequency Distribution (%) of Efficiency for Farms

Efficiency index (%)	SFA			DEA					
				CRS			VRS		
	TE	AE	EE	TE	AE	EE	TE	AE	EE
01-40	0	1	2	12	4	50	7	1	20
40-50	1	6	15	22	3	0	9	0	14
50-60	2	13	18	30	4	6	13	2	13
60-70	8	20	34	16	22	19	10	16	17
70-80	10	26	19	8	38	19	3	35	18
80-90	17	21	10	7	17	3	1	31	11
90-100	62	13	2	5	12	3	57	15	7
Total Farms	100								
Summary Statistics									
Mean	90	74	65	56.26	73.36	40.45	78.35	78.59	60.93
Minimum	50	38	38	10.1	11.9	3.4	26.8	30.8	24.2
Maximum	100	99	95	100	100	100	100	100	100
Standard Deviation	13	14	13	18.95	14.62	30.75	23.63	11.01	19.48

Table 3 shows the frequency distribution (%) and summary statistics of economic, technical, and allocative efficiencies of CRS and VRS DEA frontier methods. The results of CRS DEA and VRS DEA frontiers reveal that farmers can improve production efficiency without applying more advanced or new technology in production process which reduce production cost. Allocative efficiency is greater than the technical and economic efficiencies in potato farming.

4. Comparison between the Results of SFA and DEA Methods

This study has got an objective to compare efficiency measures from SFA and DEA methods and to assess whether any significant differences occur in the estimates of the efficiency. These two methods are different in explaining the gap between the estimated function and observations. To

explain the gap SFA method considers both producers' inefficiency and some random elements which are not under the owner's control, but DEA method supposes the absence of random error and considers only producer's inefficiency. According to Sharma et al., (1999), empirical result of both SFA and DEA methods, two quite different approaches of efficiency estimation may differ for differences in choice of input and output variables, characteristics of data analyzed, estimation procedures, and measurement and specification errors. If results are similar, then the measure of efficiency and relative efficiency in terms of socio-economic characteristics and infrastructure factors are robust and can be used as a basis for policy recommendation.

4.1 Efficiency score

The following Table 4 shows efficiency scores obtained from SFA and DEA methods.

Table 4: Efficiency Scores

Stochastic Frontier Analysis	Data Envelopment Analysis		
	Technical Efficiency (TE)		Scale Efficiency
	CRS (Overall TE)	VRS (Pure TE)	
	Input	Input	Input
76.1	54.55	56.66	74.80

In stochastic frontier analysis it is assumed that all farms have the estimated efficiency scores. But in data envelopment the analysis of each farm has different efficiency scores. DEA method represents average efficiency scores of all farms. From the efficiency score it is seen that VRS technical efficiency has higher value which implies that VRS TE enveloped data more closely than CRS TE. The efficiency score of SFA method is higher than the DEA method.

4.2 Returns to scale

Stochastic frontier analysis estimates returns to scale of farm is $\sum_{i=1}^{8} \beta_i = 2.94$ which is greater than 1. It implies that there is increasing returns to scale and inefficiency in potato farming. This result is assumed for all farms. Data envelopment analysis estimates returns to scale for all farms

separately: 65% farms have increasing, 20% farms have constant, and 15% farms have decreasing return to scale. It is easy to understand which farm has what types of returns to scale. Majority of the farms have increasing returns to scale which has similar interpretation as SFA that there is inefficiency in potato farming.

4.3 Mean and standard deviation of efficiencies

The following Table 5 presents mean and standard deviation of Economic, Technical, and Allocative efficiencies estimates of SFA and DEA methods.

Table 5: Mean and Standard Deviation of Efficiency Estimates (in percentage)

| | Stochastic Frontier Analysis (SFA) | | | Data Envelopment Analysis | | | | | |
| | | | | CRS (Overall TE) | | | VRS (Pure TE) | | |
	TE	AE	EE	TE	AE	EE	TE	AE	EE
Mean	90	74	65	56.26	73.36	40.45	78.35	78.59	60.93
Standard Deviation	13	14	13	18.95	14.62	30.75	23.63	11.01	19.48

The mean values of efficiency estimates based on Stochastic Frontier Analysis are higher than those based on the CRS and VRS DEA frontier. It implies that the stochastic frontier is well fitted to the data set compared to the DEA frontier. Technical efficiency scores of SFA model are larger than both CRS and VRS DEA model. Sharma & Zaleski, (1997) also got the similar findings for swine industry in Hawaii. The value of standard deviations shows that DEA frontier shows larger variability in economic, technical, and allocative efficiency estimates than stochastic frontier.

4.4 Factors affecting inefficiency from SFA and DEA method

The factors affecting economic, technical, and allocative efficiencies of SFA and DEA methods are presented in Table 6.

Table 6 Factors Affecting Inefficiency

Factors	Stochastic Frontier Analysis (SFA)			Data Envelopment Analysis					
				CRS (Overall TE)			VRS (Pure TE)		
	TI	AI	EI	TI	AI	EI	TI	AI	EI
	Coefficients								
Constant	7.062*	5.542*	6.318*	0.969*	0.725*	0.710*	1.077*	0.827*	0.871*
Age	-0.531*	-0.027*	-0.022*	-0.019*	-0.013*	-0.021*	-0.167*	-0.012*	-0.020*
Education	-0.318*	-0.092*	-0.011*	-0.025*	-0.046*	-0.016*	-0.010*	-0.037*	-0.050*
Experience	-0.224*	-0.016*	-0.050*	-0.017*	-0.010*	-0.010*	-0.031*	-0.021*	-0.040*
Land Fragmenta-tion	0.229*	0.034*	0.056*	0.126*	0.061*	0.101*	0.086*	0.057*	0.066*
Family size	0.975	0.020	0.017	0.036	0.005	0.027	0.011*	0.006	0.005
Deweeding	-0.662*	-0.046*	-0.025*	-0.061*	-0.020*	-0.027*	-0.026*	-0.018*	-0.011*

*Indicate 5% level of significance

The socio-economic and infrastructural factors' results for both methods are similar in direction and different in co-efficient values. Table 6 shows that the coefficient of farming experience is negative for all inefficiencies (TI, AI, EI) denoting that households with more farming experience can improve their skill and become more capable of managing inputs efficiently and tended to technically efficient potato production. The

coefficient for the land fragmentation variable is positive, implying that inefficiency tended to increase with the increase in land fragmentation. If lands are more fragmented, those farms are technically less efficient than those of less fragmented farms. The larger the land size is the more economic it becomes because farmers can easily apply modern technologies like tractors and better irrigation management. The coefficient of family size is positive but not significant, which implies that large or small family size has not significantly which affected farming efficiency. De-weeding also has a significant effect on potato farming efficiency. The coefficient of education is negative and significant which implies that farmers with more schooling tended to be technically more efficient than farmers with less education or no education at all.

Two methods give different efficiency scores; and provide returns to scale in a different way. But from both the methods we can understand potato farming is inefficient. From DEA we know which farm presents which type of returns to scale. In the case of factors affecting inefficiency, the estimated coefficients are different in value but the same in direction. The efficiency score of SFA model is higher than DEA model, which implies that SFA frontier fits tighter than DEA frontier. SFA and VRS DEA are almost similar in the case of estimated technical, allocative, and economic efficiency. In the case of DEA, VRS TE enveloped-data more closely than CRS TE. We may conclude that Stochastic Frontier Analysis is more applicable to the agriculture sector since the owner cannot control random errors that exist in this sector.

5. Conclusion

Bangladesh achieved a commendable success in potato production even under the global context due to favorable agro climate and lower labor cost. Considering these opportunities, potato farming efficiency can help Bangladesh achieve short- and long-term economic targets. It requires studying the possibility of potato productivity raising through efficiency improvement without introducing new technologies or increasing the resource base. The empirical results of both methods show that the SFA model's efficiency score is higher than the DEA model, which implies that the SFA frontier fits tighter than the DEA frontier. SFA and VRS DEA are almost similar in case of estimated technical, allocative, and economic efficiency. In case of DEA, VRS TE enveloped-data more closely than CRS TE. The variability and level of production of potato farming is determined by technical inefficiency. The estimated infrastructure and

socio-economic factors jointly determine the variabilities of potato production. There are significant economic, technical, and allocative inefficiencies in potato farming and scope to increase potato production levels through efficient improvement, increasing the farm household's income and welfare. We may conclude that Stochastic Frontier Analysis is more applicable to the agriculture sector since random error which the owner cannot control exists in this sector.

This study emphasizes that following factors need attention to increase potato productivity. Formal education, particularly agriculture-related education, can help farmers increase their knowledge about cultivation and cost-minimizing input use, which can improve allocative efficiency. Extension program could be used to reorient the application of methods, timing, and amount of inputs and production methods. Land tenure and management policies could be designed to reduce land fragmentation. That can reduce obstacles in utilizing existing technology efficiently and helps better allocation of inputs, utilization of irrigation, fertilizer, and land preparation in a cost-minimizing way since there are no training, cold storage, and Access to credit facilities. If the farmers have those facilities, the inefficiency of production performance would be reduced substantially. To achieve production efficiency, more emphasis should be placed on choosing the appropriate technology and efficient use of resources for the scale of operation. Further research would be better if collected data and information were based on a larger sample size.

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The Determinants of Effective Management Information Systems in Cement Companies of Bangladesh

Mafruha Hossain

Abstract

Management Information System is a flow processing procedures which are used to make decisions ranging from daily minutiae to top level key strategies. The effectiveness of MIS can be influenced by some environmental factors or forces. This study examined the impacts of the determinants of environment on the effective Management Information System (MIS) and also attempted to identify the correlation between effective MIS and organizational performance in the cement companies of Bangladesh. By adapting scales from previous research studies, a questionnaire is designed to conduct a survey on 200 employees who are working under the corporate head office of five leading cement companies of Bangladesh. Multiple Regression and Spearman's Correlation Coefficient are used to test the null hypotheses. Results indicated that top management support plays the key role in comparing the user involvement in influencing the effective MIS. It is also recognized that there is a correlation between effective MIS and organizational performances. Result of this study has a great significance towards the academia and the policy maker of cement companies to take their strategic decisions regarding the determinants of effective Management Information Systems and its impacts on organizational performance.

Key Words: Management Information Systems, Determinants of Environment and Organizational performance.

1. Introduction

In today's digital world information and information systems have become the way of life. The world is moving forward by the development and utilization of information technology. Information permits an organization to take appropriate and proper decisions (Caranana, 2012). At present, it's hard to find organizations that could run their business operations without the implementation of Management Information System (MIS). An

Information System (IS) is a set of process comprising of collecting the information, then processing, storing and transferring in order to support the managerial operations within an organization. MIS allows to use the appropriate information at the right time in the right manner, which is required to support the managerial operations (Mamary et al. 2014). According to Shergill et al. (2012) the success of organizational operational administrative decisions is largely dependent on the availability of information. Information is treated as one of the crucial resources just like capital, manpower or machinery to survive in the competitive world (Tripathi, 2011). Irani in 2001 showed that effective IS can enhance the efficiency and effectiveness in managing the organization and create stronger organizational culture. The desired result from the use of MIS largely relies upon some factors like the supports from consultants or suppliers, top level authority's cooperation and their commitment, size of the organization etc. On top of that, MIS permits to move information among different departments rapidly and the face to face discussion which eventually increase the responsiveness of organization (Nath and Badgujar, 2013). Yasar et al. (2014) found that MIS deliver reliable, accessible, complete and understandable information as per the time it requires. In the recent time, the critical factors that affect the management information systems have been carried out with (Nguyen et al., 2020) or the performance of information system (Aujirpongpan & Hareebin, 2020). The process performance, the supply chain, technology, government and political factors and human and safety were found as principal determinants of productivity (Biswas et al. 2020). The use of MIS in the Cement industry is soaring up day by day. In this industry from the overall production to distribution the entire operations management is coordinated largely by MIS and the overall outlook and the constant demand of cement industry of Bangladesh for the upcoming next five years is found to be promising in terms of demand run by mega projects and residential area (Bangladesh Cement Industry View, 2019). The annual demand of cement industry in 2021 was 38.98 million ton (BCMA, 2022), thus this industry is escalating to its zenith in terms of its rising demand. The constant demand turns the entire production and operations management troublesome to handle smoothly and MIS emerges as a glare of hope. Different environmental factors are responsible for influencing the effective MIS in the organization. Moreover, at present, various new emerging topics are associated with MIS (Budiarto et al., 2015), for example improving tactical and strategic planning (Karim, 2011), studies specially on factors that influence most the MIS have been carried out now a days (Chiu et al., 2016 and Nguyen et al.,

2020) and also information performance bears a great deal in the recent studies (Aujipongpan & Hareebin, 2020). More precisely, support from the consultants and suppliers, owner's participation, top management commitment, size of organization etc. are the key factors to be considered for MIS (LE et al., 2020). Hence, it is needed to ascertain the determinants for ensuring effective MIS in cement industry of Bangladesh. Thus, to address this research gap, this study is to find out the impacts of top management support and user involvement on ensuring effective MIS and also the effect of effective MIS on organizational performance in cement industry of Bangladesh.

2. Significance of the Study

MIS is the study which is concerned with information system that is used in managing the organization. MIS helps an organization reach their organizational goal (Hailu, 2014). For making the strategic, financial, operational, HR and marketing decision immediately and successfully, the information system plays the notable role. A good quality and successful Information System (IS) can increase the efficiency and effectiveness of business performance and create the stronger organizational culture (Irani, 2001). The effectiveness of MIS can be influenced by a numbers of factors and furthermore the effective MIS can also improve organizational performance. In Bangladesh, the use of MIS has been increased very rapidly. Though the initial set up cost of pursuing of new IS generally is high, so, necessary considerations should be provided in allocating suitable budget in the initial stage of installing MIS in the context of Bangladesh, (Rahman, 2021). Different companies under different industries are taking the advantages of it. The cement industry is not out of it. In Bangladesh, the cement industry is becoming the rapidly growing cement market around the world, which grew with nearly 11.5% CAGR (Bangladesh Cement Industry View, 2019). These cement companies right now operate their managerial functions under their corporate head office very smoothly by having the blessings of MIS. So, the attempt of this study is to trace out the environmental factors' impacts on ensuring the effectiveness of MIS and likewise to find out the influence of effective MIS on organizational performance in cement industry of Bangladesh.

3. Research Objectives

The main objective of this study is to analyze the determinants that impact upon the effective MIS and also to find out the correlation between the

effective Management Information System with the organizational performance in cement companies of Bangladesh. More precisely the following specific objectives are fulfilled by this study:

I. To identify whether the top management support and user involvement have any significant impact on effective Management Information Systems and their degree of relationship.

II. To trace whether there is any correlation between effective Management Information Systems and organizational performance.

4. Literature Review

Information system (IS) comprises of some integrated element which function all together in order to collect, process and preserve information. It is a formalized system of collecting, processing, storing and reporting data which are collected from various sources to make different types of decisions (James, 2003). The intent of this system is to manage and transmitting information to reduce the amount of expenses and for increasing the efficiency (Shaqiri, 2014). One of the leading taxonomies of IS is MIS. This MIS holds the great deal in terms of decisions, operationalization and implementation of various information oriented tasks.

4.1 Effective MIS

Information system (IS) is a proper combination of hardware, data, software, procedures and people directed at producing information (Laudon, 2013). MIS becomes a vital and integral part of the decision making process within the organization. Iyenger et al. in 2010 conducted a study on the banking institution and found IT support and standardization as important in ensuring the effectiveness of MIS. The impact of information technology on individual and firm performance is significant (Robert et al., 2007). Whereas, Kasasbeh in 2007 found very low correlation between the size of the investment, software, hardware and workers in the field of IT with the effectiveness of organizational performance, the necessary information is provided by the MIS which plays the key role in manager's decision making. The quality of information system for ensuring the effective Management Information System occupies a great deal in the literature of MIS over the time.

Table 1: Matrix of the Most Recent Studies on MIS

Source	Title	Theoretical Standpoint	Findings	Year
El-Ebiary et al., 2018	The Influence of Management Information System (MIS) in Malaysian's Organizational Processes—Education Sector.	None	Management information system have an intense benefits towards the organization as this system can reduce administrative errors.	2018
Meeßen et al., 2019	Trust in Management Information Systems (MIS).	Technology Acceptance Model	The behavioral intention to MIS is influenced by trust and consequently it informs the user of MIS.	2019
Benbya et al., 2020	Complexity and Information Systems Research in the Emerging Digital World.	Chaos Theory	The complexity in digitalization is unavoidable under the sociotechnical contexts.	2020
LE et al., 2020	The Determinants of Management Information Systems Effectiveness in Small- and Medium-Sized Enterprises	Contingency Theory	User involvement, knowledge of managers and information quality demonstrate the effectiveness of Management Information System.	2020

Source	Title	Theoretical Standpoint	Findings	Year
Rahman, 2021	Management Information System (MIS) and Its Implementation in Organization: Bangladesh Perspective	None	In order to implement Management Information System, proper attention must be given on budget.	2021
Blongkod, 2022	Effect of regional financial management and Regional management information system on Financial Performance.	None	The regional management information system significantly influence on financial performance.	2022

4.2 Top management support

The top management support dictates the positive involvement and support of management for the use and execution of MIS within the organization (Rapina, 2014). It indicates that top management support is a degree to which senior management can comprehend the necessity of Information System and the extent that dictates to which they are involved in IS activities.

Delone in 1988 argued that company's owner is the key concern towards the implementation of IS. In several studies, it is identified that there is a constant importance of the involvement of management for ensuring the effectiveness of MIS (Lee, 2014). Ismail in 2009 conducted a study on Malaysian Small and Medium Enterprises and found that the knowledge of managers and owners has an impact on the effective MIS. Every organization's management takes the decision, plan, prepares, develops and controls the activities by proper use of formal and informal sources of information. To reveal the relationship between top management support and effective MIS, the following hypothesis is developed-

Ho1: The impact of top level management support on the effective MIS is not significant.

4.3 User involvement

The users of MIS have a certain levels of skills, qualification, experience and expertise which enable them to perform their best (Meetany, 2004). It is a psychological condition of an individual and personal relatedness of a system (Barki, 1994). User involvement may be influenced by some factors which are user motivation, communication, user disagreement/ conflict, user ability, organizational culture, user approach toward system, complexity and user attitude (Abelein and Paech, 2015; Abusamhadana and Elias, 2018). The involvement of user entails a lot significance for affecting the successful implementation of MIS. Iskandar in 2015 found that the interference of the user found to be significant in planning to the development of MIS within the organization.

User involvement is a

"psychological state of the individual, defined as

the importance and personal relevance of a system

to a user" (12)

The users use the information generated from MIS directly, so they know the best possible requirements for the development of the system which is pivotal for the development of business (Thong, 2001). Moreover, it is needed that this user team must have knowledge about the activities of production and business organization, much innovative, having the ability of team work and their participation in IS development process is necessary (Iskandar, 2015; Kim et al., 2020). Petter and Mclean in 2016 conducted a study where they traced there is a positive significant relationship between user involvement and information quality. So, in cement industry the impact of user involvement on effective MIS is needed to evaluate. So, the null hypothesis in this regard is-

Ho2: The impact of user cooperation on the effective MIS is not significant.

4.4 Effective MIS and organizational performance

Today's organizations are running on Information System (IS). It is as important as no organization now sustain without the use of Information system (Kehinde and Yusuf, 2012). IS provides the link to connect all the components (HR, accounting, marketing, finance and operations etc.) together and ensure their existence in the competitive environment. Every employee within the company needs to use and generate information, and

for that reason no person in the organization can be separated from the advantage of IS (Caranana, 2012). Nath and Badgujur in 2013 showed that MIS delivers a lot of benefits towards the business organization: such as appropriate response to business problems; effective coordination between or among the departments at different levels; have the access to relevant data; improvement of departmental problem solving technique; less employee requirements. Effective MIS depends upon the ability of employees. Employees' behavioral intention is determined by their abilities, efficacy etc. (Sykes et al., 2009). Because the stronger the intention, the better the employee can perform (Aizen, 1991; Venkatesh et al., 2006). In the fields of IS, behavioral intention has a strong association with employee performance (Albarracin et al., 2001; Venkatesh et al., 2003). So, to perform MIS better towards the achievement of organizational performance, employees' abilities contribute a lot.

The organizations take their decisions on the basis of cost benefit analysis (Doya et al., 2012), where their main intention is to maximizing benefits by minimizing costs (Schacter et al., 2011). MIS can be treated as a weapon to reduce cost by maximizing outputs. Information system helps organization to maintain efficiency of Human Resource. Furthermore, these efficient management of HR ensures the performance of the employees of the companies in Bangladesh (Akhter et al., 2013). It is needed to know whether there is any impact of effective MIS on organizational performance or not. So, the null hypothesis in this regard is-

Ho3: The impact of effective MIS on organizational performance is not significant.

4.5 Research gap

Management Information System is a very well-practiced buzzword in the recent time. Studies related with this study have been conducted over the time around the world. In Bangladesh, some studies conducted on MIS under different industry like banking, telecom but the amount is not remarkable. Particularly, in the cement Industry the determinants that influence the effective MIS and the impact of effective MIS on organizational performance are not traced out yet. Consequently, there is a certain research gap in this context. Thus, the attempt of this study is to fulfill this research gap in an inclusive way.

5. Theoretical Background and Conceptual Framework

The theoretical background or the basis of this study is contingency theory. As per the contingency theory the formation and designing of the MIS are being influenced by several factors which can be characterized by organizational and external environmental factors (Budiato et al., 2015). This theory provides insights why and how organizations behave the way they do. This theory also entails that all decisions that managers take will be affected by the contingencies of a given situation. The conceptual framework of this study is articulated here-

Figure 1: Conceptual Framework

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┌──────────────────┐
│ Top Management   │
│    Support       │ ──────┐
└──────────────────┘       │      ┌──────────────┐      ┌──────────────────┐
                           ├─────▶│ Effective MIS│─────▶│ Organizational   │
┌──────────────────┐       │      └──────────────┘      │   Performance    │
│ User cooperation │ ──────┘                            └──────────────────┘
└──────────────────┘
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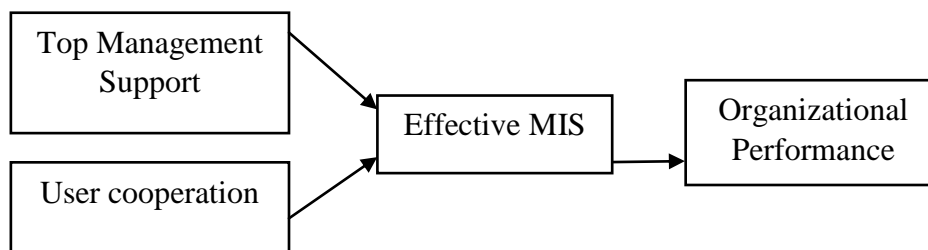
6. Methodology

6.1 Research design

This study is descriptive type in nature. Because this type of study is occupied to ascertain and describe the characteristics of the related variables of interest in a certain situation (Hailu, 2014).

6.2 Time reference

This study is a cross sectional study in terms of time referencing. This type of time referencing used to gather data on a one-shot basis, is economically efficient and it also represents a wide target population; provides inferential, descriptive and explanatory information etc. (Kothari, 2008). Cross sectional study is undertaken here, as the primary data was collected on an immediate basis. Through the questionnaire survey data was collected at a single point of time from the respondents.

6.3 Population

The target population of this study is all the employees who are working under the corporate head office of Shah Cement, Seven Rings Cement, Scan Cement, Fresh Cement, Bengal cement of Bangladesh. A target population is the combination of people who owns the information that the

researchers are looking forward to collect, summarize and produce results (Birks et al., 2007). The five cement companies which are Shah Cement, Seven Rings Cement, Scan Cement(Heidelberg Cement), Fresh Cement and Bengal Cement hold their position within the top ten cement companies' list of Bangladesh in terms of their sales and market share (Source: Internal reporting, Appendix 1). As, these companies are large sized, they need to use MIS in their daily operations to make the process easy, convenient and controllable. Total 5 cement companies are selected as statistics suggests that at a range of 10% of the population should be covered for having a good consistency of data (Lindstrom, 2010). In Bangladesh, 31 cement companies are enlisted within Bangladesh Cement Manufacturers Association (BCMA, 2022). So, 10% of the total 31 numbers of cement companies will be 3. Thus, in this study 5 companies out of top 10 cement companies are selected where MIS have been utilized. So, these 5 cement companies are representing the cement industry of Bangladesh in terms of contribution and adoption of MIS.

Name of the Company	Sample selection
Shah Cement	40
Seven Rings Cement	40
Scan Cement	40
Fresh Cement	40
Bengal Cement	40

6.4 Sample size

The sample size of this study is 200 numbers of employees who are using information system in operating their daily organizational work. The sample size is determined by Cochran's suggestion-When there is a large population and the variability within the population is unknown then at 5%, 7% and 10% precision level, the sample size should be occupied at least as 400, 204, 100 accordingly. In this study at 7% precision level the sample around 200 has been selected. 7% precision level is considered in this study as more than 7%, it is undertaken as type I error and to ensure 93% confidence interval within this study, 7% error is considered (Vittinghoff & McCulloch, 2007).

6.5 Sampling distribution

Total sample size of this study is 200. The sample is collected from five leading cement companies' corporate head office. The respondents are the employees who are working under the corporate head office and taking the advantage of MIS. Sampling distribution is made by following the equal allocation method. The sampling distribution in terms of the selected cement companies are given-

6.6 Sampling technique

Non probability judgmental sampling method has been used to collect and select the respondents. It is a form of sampling method from which the population elements are intentionally selected on the basis of judgement of the researcher (Narsh, 2007). Judgmental sampling method might have some biasness or errors. To overcome the biasness especially the confirmatory biasness of this method, the criterion of selecting the respondents are given the top most priority. Respondents are selected who are working in the head office and who have been using MIS for a while at least.

6.7 Measurement scale

To measure the dependent and independent variables, this study is selected from the preceding studies. The independent variable top management support and commitment comprises of three items: (1) Top Management Support; (2) Top Management Involvement; (3) Top Management Undertaking Commitment. This scale is also modified by Ismail and King (2007). To measure another independent variable- User Involvement; the scale of Thong (2001) has been used in this study. In accordance with that user involvement measured by (1) user attendance in information system adoption meeting (2) user involvement in information requirement analysis (3) user involvement in reviewing the necessary consultants' recommendations (4) user involvement in information system decision making. There are a lot of views on measuring the effectiveness of MIS. In this study the scale of LE et al. (2020) has been used. The output information generated from MIS must ensure the quality standards which is suggested also by International Financial Reporting Standards (IFRS), which are-(1) Relevance, (2)Timeliness, (3) Faithful representation, (4) Understandability, (5) Ease of use and (6) Information Security.

6.8 Instrument and data analysis method

To test the reliability of the data set the Cronbach alpha coefficient is occupied. This test has been conducted in order to trace the inter-item correlation within the each variable of questionnaire. The more close the Cronbach alpha to one, the more the internal consistency of reliability (Sekaran, 2003). In order to identify the degree of influences of factors on effective MIS and the degree of relationship among them the standard multiple regression has been occupied. Moreover, Spearmans' correlation used to know whether the effective MIS and organizational performance is correlated or not.

7. Analysis and findings

7.1 Demographic analysis

In this study, 59% of the respondents' age lies in between 24 to 34 years, whereas around 36% respondents' age lays from 35 to 44 years. Among the respondents, 90% of them were male and the rest 10% respondents were female. It is notable that in cement industry the numbers of female employees are comparatively less than male. 71% of the respondents completed their post-graduation and 29% of the respondents completed their under grade program. No respondent was found who have pursued any higher degrees after their post-graduation.

7.2 Reliability test

Table 2: Reliability Statistics

Reliability Statistics	
Cronbarch Alpha	**N of items**
0.875	6
0.829	3
0.783	4

The Cronbarch alpha more than 0.7 generally is considered as good reliability. So, the cronbrach alpha of Table 1 shows a good reliability as all the values are more than 0.7. The coefficient Alpha respectively in between 0.7 to 0.8 is denoted as good reliability and from 0.6 to 0.7 is considered faire reliability (Zikmund et.al, 2010).That indicates all the variables are having high correlation and reliability towards the unobserved variable.

7.3 Result of multiple regression

Multiple regression has been used to evaluate the influence of two independent variables (Top Management Support: TMS, User Involvement: UI) on effective MIS. In order to ensure that there is no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity; the preliminary analysis has been conducted.

Figure 2: Normal Probability Plot

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: EMIS
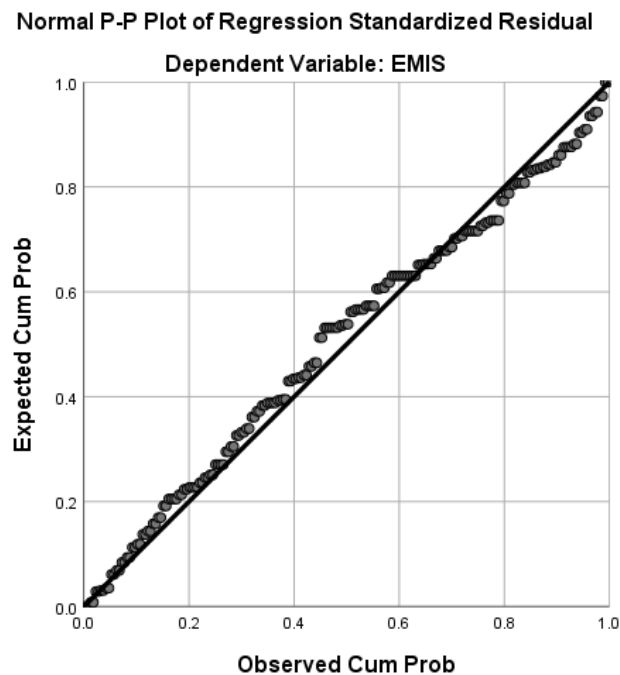
An inspection of the normal probability plot of standardized residuals (Figure-2) values specific that the general assumptions of normality, linearity and homoscedasticity of residuals have been fulfilled. The Mahalanobis distance does not exceed the critical x^2 for df $= 2$ (at $\alpha = .001$) of 13.82 (As there are two independent variables) which indicates that there are no multivariate outliers in the data set.

Table 3: Coefficients

		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.662	.196		8.492	.000	1.276	2.048					
	UI	.115	.037	.162	3.071	.002	.041	.189	.326	.213	.157	.934	1.071
	TMS	.543	.045	.633	11.980	.000	.454	.633	.675	.647	.612	.934	1.071

a. Dependent Variable: EMIS

From the Coefficients, Table-3, under the collinearity statistics the Tolerance value is 0.934 which is more than 0.01(Tolerance<0.01) and the VIF's value is 1.071 which is not more than 10 (VIF>10). So it does not violet the multicollinearity assumptions.

So, from the analysis it can be said that the data is normally distributed and it fulfills the basic assumptions to run the multiple regression model.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.693[a]	.481	.475	.48335
a. Predictors: (Constant), TMS, UI				
b. Dependent Variable: EMIS				

From the model summary Table-4, it is identified that the R square value is 0.481. That indicates that Top management support (TMS) and User Involvement (UI) accounted for 48.1% variability in the effectiveness of MIS, $R^2 = 0.481$ and adjusted $R^2 = 0.475$.

Table 5: ANOVA

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.011	2	21.506	92.051	.000^b
	Residual	46.492	199	.234		
	Total	89.503	201			
a. Dependent Variable: EMIS						
b. Predictors: (Constant), TMS, UI						

The model is statistically significant as the p value is less than 0.05 which is suggested by the value of ANOVA table.

The Beta value of User Involvement (UI) from the Coefficients Table-3, is 0.162 (beta=0.162, p<0.001) and the beta value of Top management support (TMS) is 0.633 (beta=0.633, p<0.001). The result shows that both the independent variables have significant influence on the effectiveness of MIS. So, the null hypotheses of there is no relationship between top management support and effective MIS and no relationship between user involvement and effective MIS both can be rejected. Between these two variables the beta value of TMS is 0.633 which is more than the beta value of UI (beta=0.162). That is, TMS contributes 63.3% and UI contributes 16.2% towards the effectivess of MIS. More specifically, if the TMS could be increased by one standard deviation, the effectiveness of MIS would be likely to increase by 0.63 standard deviation units.

7.4 Result of spearman's correlation

Table 6: Spearman's Correlation

Correlations				EMIS	Organizational Performance
Spearman's rho	EMIS		Correlation Coefficient	1.000	.511**
			Sig. (2-tailed)	.	.000
			N	200	200
	Information system increases job performance and productivity		Correlation Coefficient	.511**	1.000
			Sig. (2-tailed)	.000	.
			N	200	200
**. Correlation is significant at the 0.01 level (2-tailed).					

The above spearman's Correlation, Table 6, shows that correlation between EMIS and Job performance & productivity is statistically significant as the Sig. value is less than 0.05. So the null hypothesis of there being no relation between EMIS and Organizational performance can be rejected. The correlation coefficient between EMIS and Organizational performance is 0.511, so the direction is positive and there is a good strength between the variables.

8. Theoretical and Managerial Contributions

This study makes some significant contribution towards the academia along with the theory. However, the design and construction of MIS are affected by the characteristics of the organization which is suggested by the contingency theory (Budiarto et al., 2015). So, it is essential to identify the determinants for ensuring effective MIS in the organization. Consequently, the impact of effective MIS on organizational performance is identified which can generate some interest of the academician to take decision and to further investigate its impact on other fields as well. Result of this study also contributes to the literature in the field of MIS and its impact on organizational performance. Management information system is treated as a major contributor for the firm's performance. The result of this study shows that top management support and user involvement both contribute to ensure effective MIS and between them user involvement contributes the most. So, the policy maker of the cement industry can take this result into their strong consideration in involving user in terms of adopting and operating MIS in their organization. The top level management also can comprehend that their cooperation and cohesiveness towards the implication of MIS is inevitable. The direct user (employees) of MIS may come to know their prominence in terms of operating and adopting MIS in the organization.

9. Conclusion and Recommendations

Information and information system are becoming an unavoidable factor of production. A well-developed Information System is needed to maintain the organizational success. Proper management of MIS can integrate and help to coordinate the basic operational decisions within the business organization. Result of this study shows that both the independent variables- Top Management Support and User Involvement have significant contribution towards the effective MIS. Between them, Top Management Support has more significant impact on the effective

MIS in cement companies. It is notable that without the cooperation, sanction of budget or the strategic policy regarding the adoption of MIS of top level authority, it's not possible to ensure the effectiveness of MIS. Since the owners are more responsible in developing MIS (Delone et al., 1992), they understand the business better than anyone, subsequently their involvements cooperate MIS to achieve challenging target which further help to achieve organizational performance (Jarvenpaa & Ives, 1991). The output of this study also shows that the correlation between effective MIS and organizational performance is significant. The cement companies who are now taking the advantages or are going to take can consider this result and implement it at the time of policy making. Because the computer system helps the decision maker by assisting them in decision making and even can help to take decisions independently (Ibrahim, 2005). MIS provides information to predict the future (James, 2003). The cement companies of Bangladesh, nowadays soaring up and contribute to the national economy immensely. They are taking the advantages of MIS for ensuring the inter-departmental data management or for maintaining proper transaction processing unit. MIS requires continuous upgradation and follow up which in turn requires the initial cost. So, if the top level authority does not have much enthusiasm in sanctioning the budget regarding the execution, upgradation or alteration of information system, it will not be possible to ensure the effective MIS for the long run. Thus, from the findings of the study, some recommendations can be suggested below:

- The top level authority of cement companies should advance their knowledge regarding the upgraded version of information system in order to make the MIS updated and sanction adequate budget for this fields.

- The authority can collaborate with international renowned IS support providing firms for example- Oracle, SAP, IBM, Microsoft Corporations etc. for getting the uninterrupted and efficient supports from them.

- The users of MIS needs to be trained to enhance their skills as well as to grow up their interests about the use and outcomes of MIS.

- Organizational performance is increased by effective MIS; thus much concentration should be given on practicing effective MIS, monitor the daily operations and scrutinize the pitfalls associated with this system.

9.1 Limitations and future research directions

Due to time constraints the survey was conducted on 200 numbers of respondents and concentrated only on the five leading cement companies of Bangladesh. Further studies are suggested which may consider greater numbers of respondents. Additionally, studies may also be conducted on other cement companies or on other different industries like as pharmaceuticals, RMG etc. by considering other determinants of environment.

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Appendix-1

Bangladesh Cement Industry All Brands Sales Volume

Brand Position	Name of the Brands/Factory	YEAR 2021			YEAR 2022 (Jan-Aug)		
		YEARLY SALES VOLUME by all brands QTY. in Metric Ton	YEARLY SALES VOLUME by all brands QTY. in MILLION TON	BRAND WISE MARKET SHARE %	YEARLY SALES VOLUME by all brands QTY. in Metric Ton	YEARLY SALES VOLUME by all brands QTY. in MILLION TON	BRAND WISE MARKET SHARE %
BANGLADESH CEMENT INDUSTRY ALL BRANDS SALES VOLUME / For Year 2021 & 2022
1	Shah Cement	5,652,469	5.65	14.50%	3,780,616	3.78	14.12%
2	Fresh + Meghna Cem	3,966,819	3.97	10.18%	2,641,594	2.64	9.87%
3	Meghna Cement (Bashundhara+King)	3,906,832	3.91	10.02%	2,073,235	2.07	7.74%
4	MI Cement (Crown)	2,903,290	2.90	7.45%	2,066,740	2.07	7.72%
5	Seven Rings Cement	2,849,669	2.85	7.31%	2,512,797	2.51	9.39%
6	Lafarge Holcim	2,672,337	2.67	6.85%	1,836,750	1.84	6.86%
7	Heidelberg (Scan , Dhaka+ Ruby Ctgg.)	2,536,139	2.54	6.51%	1,640,342	1.64	6.13%
8	Premier Cement (Dhaka+Chittagong+Mongla)	2,352,506	2.35	6.03%	2,177,157	2.18	8.13%
9	Akij Cement	1,988,593	1.99	5.10%	1,458,109	1.46	5.45%
10	Bengal Cement	988,133	0.99	2.53%	594,562	0.59	2.22%
11	Anwar Cement	841,786	0.84	2.16%	632,535	0.63	2.36%
12	Dubai Bangla (5 Rings)	811,338	0.81	2.08%	511,516	0.51	1.91%
13	Aman Cement	773,386	0.77	1.98%	496,707	0.50	1.86%
14	Diamond Cement	739,187	0.74	1.90%	459,491	0.46	1.72%
15	Confidence Cement	733,286	0.73	1.88%	472,675	0.47	1.77%
16	MTC (Tiger) Cement	712,450	0.71	1.83%	431,166	0.43	1.61%
17	Mongla Cement (Elephant)	604,416	0.60	1.55%	324,557	0.32	1.21%
18	Mir Cement	577,050	0.58	1.48%	381,780	0.38	1.43%
19	Royal Cement	576,555	0.58	1.48%	372,583	0.37	1.39%
20	Insee Cement	552,682	0.55	1.42%	376,086	0.38	1.40%
21	Metrocem	496,556	0.50	1.27%	390,560	0.39	1.46%
22	Eastern Cement (7 Horse)	359,556	0.36	0.92%	267,728	0.27	1.00%
23	NGS Cement	302,630	0.30	0.78%	90,050	0.09	0.34%
24	Aramit cement	248,651	0.25	0.64%	59,962	0.06	0.22%
25	S. Alam Cement	129,000	0.13	0.33%	146,170	0.15	0.55%
26	Mostofa Hakim Cement	27,534	0.03	0.07%	11,500	0.01	0.04%
27	Others	680,980	0.68	1.75%	563,192	0.56	2.10%
	TOTAL SALES VOLUME	38,983,830	38.98	100.00%	26,770,161	26.77	100.00%

Appendix 2: Questionnaire

a.

Please give a tick (√) in response to your answer.	

1. Age
    o Below 25 years
    o 25 to 34 years
    o 35 to 44 years
    o More than 44 years
2. Gender
    o Male
    o Female
	3. Academic Qualification
	    o Graduate
	    o Master
	    o Higher Degree
	4. Working Experience
	    o Less than 4 years
	    o 4 to 8 Years
	    o More than 8 years

b.

Please give your opinion by providing a tick (√) to the right sided single alternative. **SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree and SA=Strongly Agree**							
	SN#	*Statements*	*SD*	*D*	*N*	*A*	*SA*
Effective Management Information System	**1.**	The information system of my organization is relevant to my job.					
	2.	The information system of my organization represents the faithful information.					
	3.	The system of my organization is upgraded timely.					
	4.	The information system of my organization is understandable.					
	5.	The system is easy to use.					
	6.	The information system is capable of maintaining the information security.					
	7.	Top level authority provides supports in using the					

Top Management Support		information system in my organization.					
	8.	Top level authority involves them at the time of information system upgradation process.					
	9.	Top level authority undertakes our problems associated with information system and solve that out.					
User Involvement	10.	I have to attend the project meeting.					
	11.	I am involved in information requirements analysis.					
	12.	I am involved in reviewing consultant's recommendations regarding the change in information system.					
	13	I am involved in information system decision making.					
14. Effective MIS increases my organizational performance.							

Analysis of the Structural Faults of the Burnt Clay Bricks and Fire Bricks Building Substances via Nuclear Radiology

Shahajan Miah
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Abstract

With neutron imaging technology, the photonic density of building materials may be measured to identify intrinsic flaws in many types of construction materials. As part of our inquiry, we used two kinds of locally created construction materials Burnt Clay bricks and Fire Bricks. The samples were examined using the Tangential Nuclear Radiological Instrument of the Three Mega Watt TRIGA Mark-II research reactors. Burnt Clay brick construction material composites were equally distributed in neutron radiography images of the specimen, and optical bulk did not fluctuate at dissimilar spots. Where the sectional change in density are 0.0000, 0.0000,0.0040, 0.0000 and 0.0000 (See the data table 3). From these date we clearly conclude that, there were no visible cavities or inclusions in the materials on the radiograph. Where the sectional change in density are 0.0368, 0.0000, 0.0105, 0.0050 and 0.0210 (See the data table 3). From the given data table, we have seen that the neutron radiography image of fire bricks at several reference locations showed variations in their optical density. It is termed an "enter-of-image density difference" because the midpoint region of the picture is distinct from its adjacent locations. Although the neutron radiograph shows voids, the material is porous. However, it shows that the associated composites are not evenly diffused and blended throughout the material when it is made. Consequently, the production procedure for this construction material was a bit of a mess. Rainwater absorption and damage to the building might be a consequence of the composition's inconsistency. Due to this process, there is a drop in the material's strength and an increase in its vulnerability to even more functions.

Keywords: Nuclear Radiology, Optical Density, Uniformity, Internal Faults.

1. Introduction

Nuclear Radiography (NR) is a very effective method for enhancing studies in the area of quasi-testing. A neutron beam is used in this approach to penetrate the material under investigation. This beam is suppressed by the sample substance in proportion to the neutron proportion of the sample material. The beam is then identified by an imaging tool, which generates a picture of the sample's core that represents the macroscopic structure of the material (Berger, H.;1965). Thermal neutrons have a unique property that makes them particularly useful for studying industrial components: they penetrate deeply into industrial materials such as steel, aluminum, and zirconium. This property makes thermal neutrons particularly useful for studying industrial components because they penetrate deeply into an industrial substance such as steel, aluminum, and zirconium. Neutrons are effectively lessened by just hardly any particular components, such as hydrogen, boron, cadmium, samarium, and gadolinium, and their attenuation is very efficient. Because of their high hydrogen content, biological materials and water, for example, attenuate neutrons, but numerous formational substances, such as aluminum and steel, are almost crystal clear. Neutron skiagraph is a cutting-edge technology for non-destructive testing of materials that is an identical counterpart to X-ray radiography in terms of sensitivity and resolution. This provides certain distinct benefits to NR in the nuclear, aerospace, and defense sectors, as well as the rubber and plastic industries. When X-rays and neutrons pass through light and heavy materials, the process known as neutron refraction (NR) provides sufficient information about both heavy and light substances. X-rays are lessened most effectively by materials with massive atoms and least effectively by materials with tiny, light atoms. X-rays can flow freely through water in a human body, but they are attenuated in bones. On the other hand, neutrons travel freely passes high-proton substances and are lessened effectively by low-proton substances, such as hydrogen. As seen in the diagram, both radiography processes employing x-rays and neutrons are reciprocal to one another. Fig. 1: depicts the transmission of x-rays and neutrons along light and heavy substances, respectively.

Fig. 1: Illustration of x-ray and neutron penetration across the light and heavy substances.
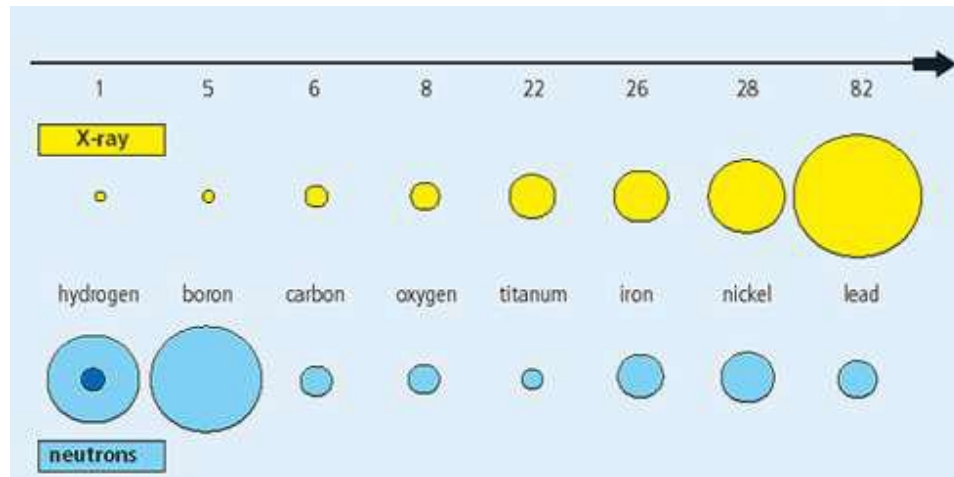
Skiagraphy using neutrons is an imaging method that produces pictures that are comparable to those produced by x-ray and gamma-ray skiagraphy. A major benefit of neutron skiagraphy is its capacity to scan very light substances (i.e., atoms with low atomic numbers), such as hydrogen, water, and carbon, among other elements. Penetrating as well as distinguishing between various isotopes of the same element, neutrons may enter particularly heavy substances (i.e., those with large atomic numbers) such as lead, titanium, and other metals as well. The use of neutron radiography for the exploration of both radioactive and nonradioactive substances has become more relevant. A neutron radiograph (NR) is a photographic representation of a substance's interior structure that is generated by the use of neutrons. Detecting light elements such as hydrogen and boron, which have significant neutron absorption cross-sections, is possible using neutrons. It is possible to capture the information offered by dynamical beams attenuation on a magnetic method using either analog or digital signals. It is a nondestructive testing technique that can be used in conjunction with another-destructive Testing techniques such as x-ray or gamma-ray skiagraphy (Von der, H.P. and Rotteger, H.; 1981 & Berger, H.; 1965). It is used to inspect metal surfaces.

NR is the photograph of the internal structure of a substance obtained by using neutron. Neutrons can detect light elements, which have large neutron absorption cross-sections like hydrogen and boron. The information provided by spatial and temporal beam attenuation is recorded

on magnetic media via analogy or digital signals. NR is a non-destructive testing (NDT) technique, which is completely complementary to other NDT techniques, like X-ray or gamma ray radiography. NR uses the basic principle of radiography when a beam of radiation is modified by an object in its path and the emergent beam is recorded in a photographic film (detector). The atoms of the object material scatter or absorbed the radiation and so the beam reaching the detector shows an intensity pattern representative of the internal structure of the object.

All radiographic method, whether making use of X-rays, gamma-rays or neutron beams are based on the same general principle that, radiation is attenuated on passing through sample object. The object under examination is placed in the incident radiation beam. The beam, which remains after passing through, enters a detector that registers the fraction of the initial radiation intensity that has been transmitted through each point of the object. Any in-homogeneity in the object on an internal defect (such as voids, cracks, porosity, inclusion, corrosion etc.) will show up as change in radiation intensity reaching the detector. The distinctiveness of NR rests on the unique interactions between neutrons and nuclei. Neutrons because of its charge neutrality are non-interacting magnetic and electric fields. These lead to some special relationships between the material and geometric properties of an object and the NR image. Due to this property, scientists felt keen interest about its use in various research and development activities.

Using the NR technique, building materials' water absorption capabilities may be studied (Islam, M. N et al.; 2000). (Peterka et al.; 1994) provided a neutron radiography standard testing technique for wetness analysis to the construction industry to assess the material's qualities, functions, and efficiency. Water-blocking chemicals prevent water, solutions, and the like from getting in.

Quality was measured in other research (Ahasan, M. M et al.; 1996). Leather and ceramics have been examined. M.N. Islam et al. have published a study on aluminum corrosion (Islam, M. N et al.; 2000). The NR was placed at the diverging beam port of the Three Mega Watt TRIGA Mark-II research facility in the current investigation. In Bangladesh, the Atomic Energy Research Establishment (AERE) reactor in Savar has been utilized. Information about AERE's Savar NR plant in Dhaka, Bangladesh. Citations in support of the thesis (Rahman, M. A et al.; 1990). The facility's parameters are detailed in (Ahsan, M. H et al.; 1995). (A.K.M. Azad Rahman et al.; 2007) also reported on the water

absorption behavior of jute goods. An investigation into the use of neutron to analyze the internal faults of RAM DDR-2 and the motherboard of Nokia-3120 has been stated by (Shahajan Miah et al; 2013). The Neutron Radiography Technique may be used to study glass fiber-reinforced polymer composite homogeneity (Shahajan Miah et al; 2018).

Using the direct film neutron radiography method, several tests were conducted:

A. The best irradiation period for the current sample is determined.

B. Optical density variation measurements are used to determine the presence of flaws in materials.

A change in the intensity of the radiation reaching the detector will reveal any variability or internal defect, such as a gap, fracture, fissure, or insertion, in the item. For each thing under investigation the strength of irradiation changes.

For x-rays, gamma rays, and neutrons, this intensity change is governed by a general absorption law (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995)

$$I = I_0 e^{-\mu x} \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..(1)$$

Where,

I_0 = Starting strength of the neutron beam,

I = Strength of the emergent beam from the object,

μ = Fading coefficient,

x = Depth of the object.

For neutron the equation is modified as

$$\phi_s = \phi_0 e^{-N\sigma x} \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(2)$$

Where,

ϕ_s = Neutrons pass through the sample, n cm^{-2} sec^{-1}

ϕ_0 = Neutrons incident upon the sample, n cm^{-2} sec^{-1}

N = Number of nuclei per cm^{-3}

σ = Microscopic cross-section, cm^2

x= Depth of the sample, cm.

The radiation intensity is measured by a detector and then recorded on an X-ray film as a result of attenuated neutron beams. NR's guiding premise is this. Regular neutron radiography may also be used to monitor the depletion rate of the control rod material. All of these tests might be carried out using irradiated TRIGA fuel elements.

2. Experimental Facility

The investigational neutron radiographers' infrastructure was equipped at the diverging beam port of the Three Mega Watt TRIGA Mark II reactors at Bangladesh's Institute of Nuclear Science and Technology, Atomic Energy Research Establishment, Savar, Dhaka. The mentioned components are part of the neutron radiography facility (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

2.1. Bismuth filter

A 15-cm-long Bi filter in the diverging beam port of BAEC's NR facility is used to reduce the strength of the beam's gamma rays greatly to avoid the radiography image from becoming hazy (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

2.2. Cylindrical divergent collimator

For the reactor's diffracted neutron beam, an aluminum hollow piston measuring 120 cm in length and 5 cm and 10 cm in diameter at either end was put into the tangential girder port. Divergent collimators have the benefit of allowing a consistent beam to be focused over a vast scanning region. As a result, our neutron radiography facilities require collimators to ensure consistent output, and as a result, we get high-resolution images (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

2.3. Lead shutter

Radiation shielding is provided at the distal end of the diverging beam pipe age by a lead-filled protection shutter and door. The shutter's lead depth is 24 cm, and the shutter's length is 33 cm (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

2.4. Beam stopper

It has been constructed with four rolling elements attached to the bottom of a wooden box that measures 68 cm x 40 cm x 68 cm in front of the diverging beam port. Paraffin wax and boric acid are used in a 3:1 weight

ratio to protect neutrons from the inside of the wooden box (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

2.5. Sample and camera holder table

Sample and camera retainer platforms with x and y-direction mobility are situated in front of the beamline (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

2.6. Beam catcher

A beam catcher with dimensions of 100cm x 100cm x 85cm has been put back of the sample and camera-carrying table to absorb transmitted and dispersed radiation.

The beam keeper's front face has a 30-cm-by-30-cm-by-30-cm hole drilled through the center, which is aligned with the beam port's central axis. A gamma-protective lead block measuring 30 cm x 30 cm x 15 cm, weighing 125 kg, has been installed at the behind of the hole.

Neutron protecting has been achieved by using a mixture of paraffin wax and boric acid. The beam collector as a whole weighs 968 kilograms (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

2.7. Biological shielding house

Both the nuclear radiation emitted is exceedingly harmful to life or livings. Biological shielding houses were built around the tangential beam port facility to protect humans from radiation. Cement, magnetite, limonite, and regular sand are mixed with stone chips in a ratio of 1:3:3 to make a unique concrete biological shielding house. The biological shielding wall also contained paraffin wax and boric acid in a 3:1 weight ratio for neutron shielding. The facility's biological shielding wall measures approximately three feet in width and six feet in height. The NR facility is described in various research (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995). The nuclear radiography facility of the Three Mega Watt TRIGA Mark II Research Reactor, Dhaka, Bangladesh, is depicted in Fig. 2 of this article.

Fig. 2: The neutron skiagraphy facility is depicted in this schematic diagram (Islam, M. N et al.; 2000).
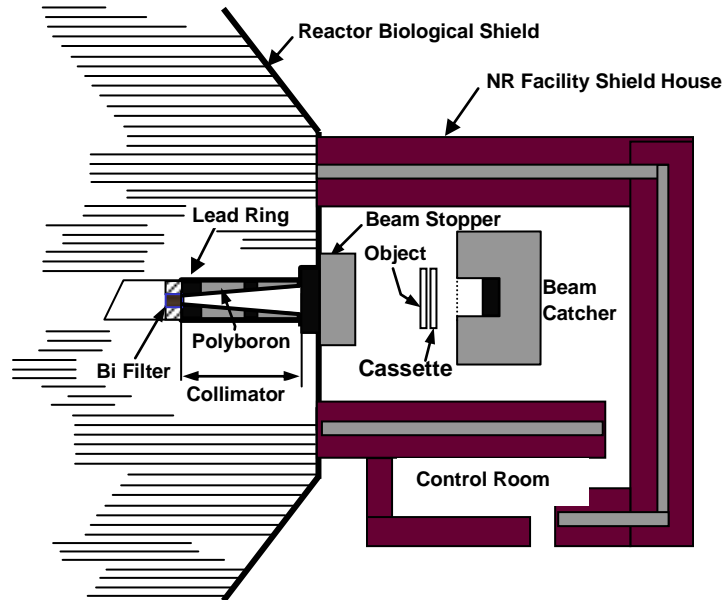
3. Experimental Procedure

3.1. Pre-irradiation procedure

Before irradiating the experimental samples, the following tasks are carried out in this experiment:

1. Obtaining and preparing samples

2. Placing the film and foil in the NR cassette

3. Setting up the sample in the neutron beam

3.1.1 Preparation/collection of the samples

Maya Building Keeper Ltd., Mirpur, Dhaka, has provided us with certain newly developed construction substances for our research. They are called "burnt clay bricks" and "fire bricks," and are used in construction.

3.1.2 Keeping the film and foil in the NR cassette

In the NR cassette, we utilized a 25-micro-thick Gadolinium (Gd) metal foil as a converter, and in our experiment, we used Agfa structruix D4DW industrial X-ray film as a detector. Single-sided suspensions are used in the films. Across the neutron beam, the sample and the NR camera were

set up on separate work surfaces. The camera was positioned just behind the sample in this position. The sample holding table was positioned so that the reactor biological shielding system provided the best possible sample position (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

3.1.3 Irradiation of the sample

A set of tests were carried out to carry out the best exposure time for the sample. For these studies, the reactor was powered up to 3 MW. As a result, we discovered the ideal irradiation and exposure time for the sample. From the final skiagraph, we learned about the sample's interior features, such as cracks, voids, and the uniformity of their components. After irradiation, there are many processes, such as film development and washing. In several studies, the processes of fixing, washing, and drying are explained in great detail (Islam et al., 2000; Peterka et al., 1994; Ahasan et al., 1996).

This may be seen in the neutron radiographic photos, which show a bright area where the sample was in close touching with the neutron skiagraphy cassette, while the background seems darker in comparison. Because more neutrons were lessened by the test sample, more neutrons were able to flow past the rest of the sample without interference.

3.2. Post irradiation procedure

The irradiated film was detached from the cassette in a dark room, and then the following methods were performed to make a neutron radiography picture of irradiated samples:

a. Developing

b. Washing

c. Fixing

d. Final washing

e. Drying

All of the following procedures are summarized below in a more detailed manner:

3.2.1. Developing

Processing circumstances are different for each film. It was time to bring out the NR cassette for darkroom development when irradiation of the

samples was completed. The product must be done to preserve the latent picture formed during irradiation to a visual image. After allowing the film to sit in the developer for a while, it was then stirred into the inaugurator horizontally without ever contacting the mug (which carries the inaugurator-synthetic). In the developing process, we utilized the Kodak D-19 developer. Temperature and the kind of film used in the process affect how long it takes to develop a picture. More contrast and quicker film speed are often associated with longer developing times. The development time should be based on the manufacturer's recommendations. When the developer's temperature changes, the development time must be adjusted. We developed the films using a developer set at 22°C for five minutes (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

3.2.2. Washing

The film was washed as many times as was deemed necessary to remove the developing chemicals. The action of the reaming inaugurator in the emulsion should be counterpoised when the development is complete. This was accomplished by vigorously agitating the developing films for one minute in the running water (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

3.2.3. Fixing

After developing, the film was placed in a solution of chemicals to clean it up. As a fixer, we used Kodak un-fix powder. The fixing time varies depending on the film and the fixer's temperature. Choosing the time for mending should be done according to the manufacturer's instructions. The films were submerged for 5 minutes at 22°C in this study. (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

3.2.4. Final washing

During the fixing process, silver mixers are created, which might damage the silver image later. Because of this, flowing water must be used to clean the film entirely. Water temperature affects the length of time it takes to wash. Table-1: shows the temperature and time needed for washing. The film used in this study was cleaned by running it under warm, running water for 15 minutes. (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

Table-1: Table for washing time of the films at dissimilar temperatures (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

Temperature	Required time
5°C - 12°C	30 min
12°C - 25°C	20 min
25°C - 30°C	15 min
Above 30°C	10 min

3.2.5. Drying

They clipped the films to a hanger and used the air conditioner to circulate fresh air-dried films after the last cleaning. There are many variations in drying conditions depending on the kind of film. Temperature, humidity, airflow, and other factors all have a role. For each experiment, the same methods were followed (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995).

4. Fundamental Principle for Determining Sample's Optical Density

Homogeneity refers to the uniform distribution of synthetic structures in this work. The composite components must be distributed correctly for the material to be homogeneous. The uniformity of an object may be judged using optical density measurements of its backdrop, the midpoint of the sample picture, and at various reference points in a skiagraphs image of the sample. As a result, the reference sites are chosen such that optical densities may be measured at these places and cover almost the whole sample. Consistent optical density values give the highest uniformity (Rahman, M. M. et al.; 2013, Rahman, M. A. et al.; 1989, Islam, M. N. et al.; 1995). To calculate the optical bulk, D, at a particular position in the film/image, use the following mathematical formula:

$$D = \ln\left(\frac{A_0}{A}\right) \quad \text{…………………………………......… (3)}$$

Here, A_0 = retaliation of dosimeter without the image and A = retaliation of decimeter with the image. The sectional change in image density of neutron skiagraph can be represented by ΔD and the equation can be written as,

$$\Delta D = \left(\frac{D_c - D_n}{D_c} \right) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..\cdot(4)$$

Where D_c = Mean optical density of the total skiagraph image and D_n = Optical density at dissimilar positions of the skiagraph image. We have calculated the optical density, of the neutron skiagraphs of the sample by a digital densitometer (Model-07-424, S-23285 Victorian Inc., USA). There is a table of optical density densitometry data in Table 3 below for the skiagraph picture.

5.   Results and Discussion

5.1 Optimization of irradiation/ exposure time

Exposure time was accepted by a series of test with varying exposure times. Researchers conducted the studies at AERE's Savar, Dhaka's Three Mega Watt TRIGA MARK-II research reactor, using the thermal neutron skiagraphy facility. At Three Mega Watt power, the reactor was used in the experiment, which proved successful. A 25-micrometer thick gadolinium metal foil was employed as the converter in the trials. Irradiation is the process by which an object is exposed to radiation. For each kind of brick, we determined how many minutes of irradiation would be necessary. However, the best period for irradiation (Optimal Irradiation Time) also implies the sharpest picture. According to Table-2, there are 50 and 65 minutes of optimal exposure/irradiation time for burnt clay bricks & fire bricks.

Table – 2: Optimal irradiation/exposure time of the substances.

Samples	Irradiation time (minute)	Optimal irradiation time (minute)
Burnt Clay Bricks	50	50
	55	
	50	
	60	
	40	

Fire Bricks	70		65
Auto Bricks	65		40
	55		
	60		
	55		

Fig. 3: Neutron Radiographic Image of burnt clay bricks (Optimal irradiation time 50 min).

Fig.4: Neutron Radiographic image of fire ricks (Optimal irradiation time 50 min).

Table – 3: **Densitometry data for burnt clay bricks & fire bricks**

Samples	Optical density at the center	Average density (D_c)	Optical density at the different positions (D_n)	Sectional change in image density $\Delta D = (D_c - D_n) / D_c$
Burnt Clay Bricks	4.88		4.88	0.0000
	4.88		4.88	0.0000
	4.86	4.88	4.86	0.0040
	4.88		4.88	0.0000
	4.88		4.88	0.0000
Fire Bricks	3.88		3.66	0.0368
	3.76		3.80	0.0000
	3.70	3.80	3.76	0.0105
	3.90		3.78	0.0050
	3.78		3.72	0.0210

Table- 4: Densitometry data at different levels for the skiagraph image of Burnt clay bricks

| Different level	Optical density					
1	4.33	4.36	4.34	4.33	4.33	4.36
2	4.37	4.31	4.31	4.36	4.31	4.38
3	4.38	4.31	4.33	4.31	4.31	4.33
4	4.33	4.32	4.34	4.34	4.33	4.37
5	4.36	4.39	4.33	4.38	4.33	4.31

Fig. 5: Optical density differences at different levels of the film background and the radiographic image of the Burnt Clay bricks.
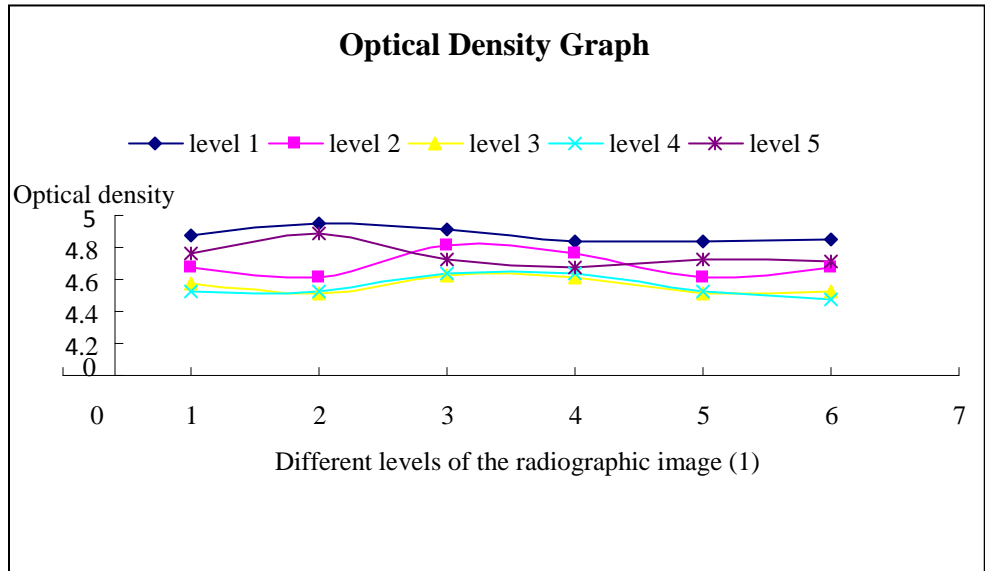
Table- 5: Densitometry data at different levels for the radiographic image of Fire Bricks

Different level	Optical density					
1	3.28	3.21	3.26	3.23	3.20	4.25
2	3.26	3.26	3.26	3.23	3.22	4.25
3	3.22	3.28	3.24	3.26	3.25	4.20
4	3.24	3.26	3.26	3.20	3.26	4.26
5	3.21	3.23	3.24	3.26	3.26	4.24

Fig. 6: Optical density differences at different levels of the film background and the radiographic image of the Fire Bricks.
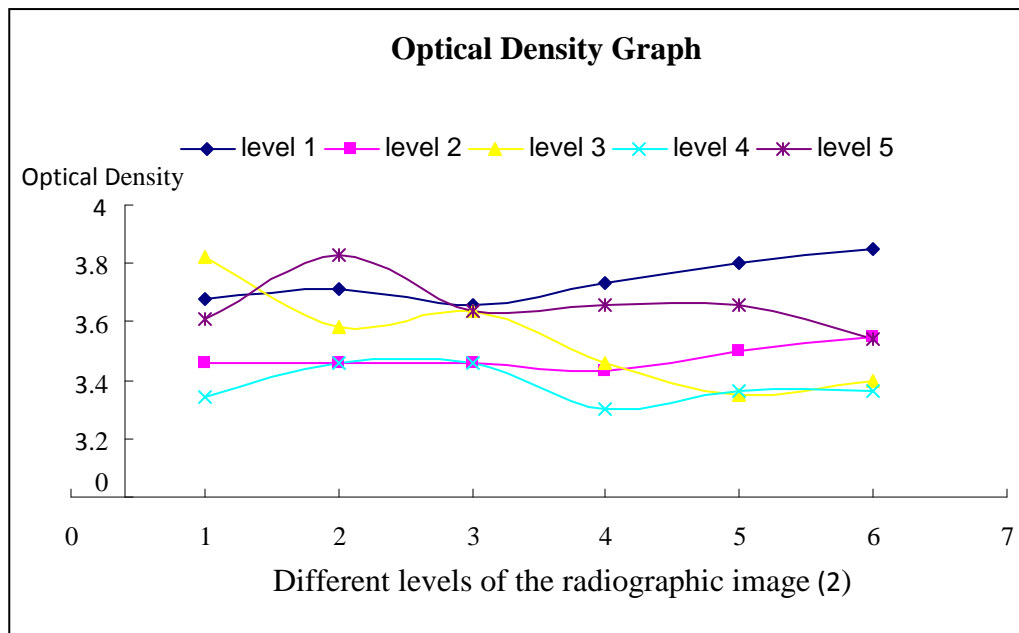

5.2 Quality/ Defects in the samples

The strength of a substance is determined by the distribution of the composite materials in the finished products. In this study, densitometry measurements from neutron radiographic images were used to examine the quality and defects of the samples. Since dissimilar levels of the skiagraph images have different optical density values, this means that the sample's constituent compounds aren't dispersed uniformly. As a result,

the defect/quality of a sample can be evaluated using the mean worth of the optical density dissimilar between the film background and the skiagraph image of the sample. The uniformity of the composite materials in the samples is ensured by the absence of variation in image density. We use digital densitometer (Model-07-424, S-23285 Victorian Inc., USA) to measure the optical density in the different level of the two samples. We count the optical density of the level of 1-5 for the Burnt Clay Bricks and we have seen that the value of optical density in the level of 1-5 are approximately same which shown in the **Table: 4**. But optical density in the level of 1-5 for the Fire Bricks are not similar which shown in **Table: 5**. If we plotted the data table 4 and 5 and we get the graph like **Fig. 5** and **Fig 6** respectively.

From **Fig.5** and **Fig. 6**, it is concluded that the associated elemental distributions are homogeneous in burnt clay bricks and non-homogeneous in fire bricks. Fig. 3 and 4 are showing the neutron radiographic image of Burnt Clay bricks and Fire Bricks with optimal exposure time 50 minutes (See Table:2) and 65 minutes (See Table:2) respectively. As can be seen in the radiographic picture of Burnt Clay Bricks, the materials used in their construction are very tightly packed, with not a single space or defect to be found anywhere in the brick. So it is more homogeneous. Also, if we see the radiographic image of the Fire Bricks, we notice that some spots or gap have been identified. So, Fire Bricks are not homogeneous. As a result, burnt clay bricks are a viable alternative instead of using fire bricks.

Fig. 7: Pixel number of different levels
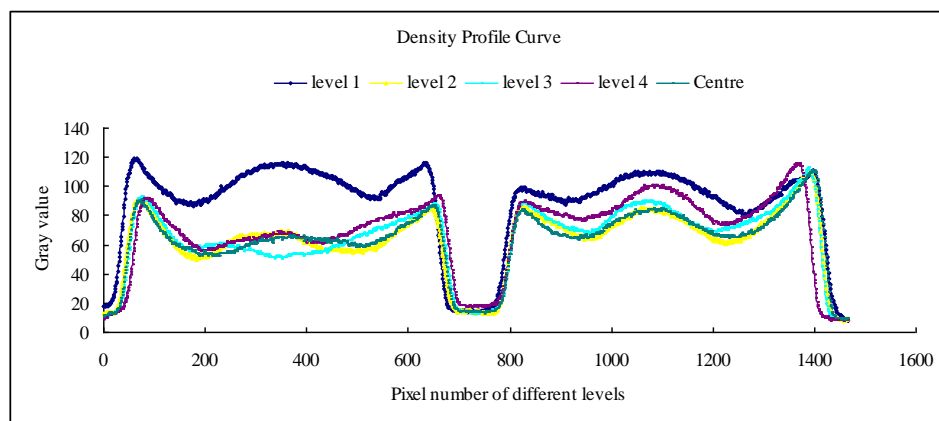
6. Conclusion

Everywhere in the world, advanced construction is dominated by the use of auto bricks. Radiation images show that the constituent elements of burnt clay bricks are well mixed, and this is evident from the radiograph. The densitometry data shows that the burnt clay bricks material's constituent elements are mixed uniformly. Based on our experience handling radiographic films, we can conclude that burnt clay bricks are of good quality.

In a skiagraph of the fire bricks materials, it appears that the sample was not accurately homogeneous. Based on densitometry data, the constituent elements of the fire bricks appear to be mixed unevenly. To improve the quality of the fire bricks, the constituent elements would be mixed in a much more refined manner.

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