

The Effectiveness of Micro-Learning Modules in Enhancing Writing Skills among Gen-Z Bangladeshi High School Students

By

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Declaration

It is hereby declared that

1. The thesis submitted is my/our own original work while completing a degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I/We have acknowledged all main sources of help.

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Approval

The thesis titled,

***“The Effectiveness of Micro-learning Modules in Enhancing Writing Skills Among Gen-Z
Bangladeshi High School Students”***

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Ethics Statement

The research was carried out in adherence to all relevant ethical considerations.

Abstract

In recent years, the need for innovative teaching methods to address the learning preference of Gen-Z learners has become more evident. This study has explored the effectiveness of micro-learning modules in enhancing the writing skills of Gen-Z learners in Bangladeshi high schools, focusing on their limited attention spans. A mixed-method approach was employed, combining a quasi-experimental design with a survey, where quasi-experimental design was primary focus. The study involved 31 tenth-grade students from a rural government high school, 17 in the experimental group and 14 in the control group. Data were collected from the written scripts of both groups and evaluated using Brown rubric. Results were analyzed with a t-test at a significant level of <0.05 for quasi-experimental sessions. Additionally, a post-intervention survey including Likert-scale questionnaires and open-ended questions was administered to the experimental group. Quantitative data derived from Likert-scale responses were subjected to descriptive statistics analysis, while qualitative data from open-ended responses underwent thematic analysis. Findings revealed that the experimental group significantly outperformed the control group in writing achievement ($t = 2.86$, critical $t = 2.405$). Moreover, approximately 70.58% of the participants expressed a favorable disposition towards micro-learning, attributing this preference to heightened engagement, enhanced comprehension and lessened anxiety. These results substantiate micro-learning as an efficacious pedagogical strategy for advancing writing skills among Bangladeshi high school students.

Keywords: writing skills; micro-learning; Gen-Z learners; Bangladeshi high schools; attention spans; engagement; comprehension; anxiety.

Dedication

I have dedicated this paper to my parents, my friends and my younger brother.

Acknowledgement

I would like to express my sincere gratitude to my supervisor, Ma'am Lubaba Sanjana, for her guidance and support throughout this research. I am deeply grateful to my mother for her unwavering support and understanding throughout this challenging time.

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List of Acronyms

CLT	Communicative Language Teaching
GTM	Grammar Translation Method
TBLT	Task-Based Language Teaching
ICT	Information Technology
Gen-Z	Generation Z
ESL	English as a Second Language
EFL	English as a Foreign Language
L1	First Language
L2	Second Language

Chapter 1

Introduction

1.1 Background Information

In an era marked by rapid technological advancement, education has undergone a massive transformation. Traditional teaching methods, especially in language learning, are increasingly challenged by digital tools designed to meet the evolving needs of modern students. Among the various innovations, micro-learning stands out as a highly promising approach, offering learners small, focused segments of learning content that can be easily and quickly customized (Samala et al., 2023). This approach is particularly well-suited for today's Gen-Z learners, who have grown up with technology and priorities interactive, fast-paced and easily accessible learning environments (Ishak et al., 2022).

One domain where this approach can contribute significantly is the writing segment of L2 learning. Writing is more complex than the other three language skills, particularly for non-native learners (Carson et al., 1990). When the writing content is presented clearly and concisely, learners tend to engage more effectively. In Bangladesh, Bengali medium high school students face numerous challenges in developing strong writing proficiency, largely due to reliance on GTM. The education system remains teacher-centered, emphasizing rote memorization over creative thinking and practical writing exercises. Writing skills are essential because they involve grammar and syntax knowledge, creativity, critical thinking and metacognitive abilities that underpin language development (Sheronovna, 2021). However, many students struggle despite memorizing

grammatical rules, as they lack adequate practice in applying them. Additionally, limited opportunities to practice English writing further hinder skill acquisition.

1.2 Research Problem

The core problem this study has sought to address is the inadequacy of traditional writing instruction methods, particularly the GTM, in fostering writing proficiency and introducing a new approach (micro-learning) for the improvement of writing skills in the context of classroom setting for the Bengali medium high schools' Gen-Z learners of Bangladesh. In the conventional writing instruction method, many students struggle to transfer what they have learned in theory to practical writing tasks. This gap between theoretical knowledge and practical application significantly hampers students' ability to write effectively.

There is a noticeable gap in existing research regarding the effectiveness of innovative teaching methods, particularly those that cater to the needs of modern learners, such as micro-learning. While traditional methods have been studied extensively, there is little research exploring how new approaches can address the specific needs of today's tech-savvy, digital native learners. Gen-Z students, who are accustomed to consuming content in short, engaging formats, are not well-served by traditional teaching methods that rely on lengthy, content-heavy lectures. These students require a more dynamic and engaging learning experience to help them build practical skills, particularly in writing. However, Gen-Z struggles with shorter attention spans (Microsoft, 2015), which can lead to disengagement when confronted with traditional monotonous lessons. These generation characteristics- such as a preference for interactive, engaging digital content and need for shorter, more focused learning sessions due to limited attention spans, demand that

teaching methods be adapted accordingly. Traditional methods fail to cater these unique needs, leaving a gap in how writing instruction is delivered.

Recognizing these challenges, this research has aimed to fill the existing knowledge gap by investigating how micro-learning, a teaching method that aligns with the characteristics of Gen-Z, can be used to enhance writing proficiency. It has become essential to explore innovative teaching methods like; micro-learning that address both the cognitive and motivational needs of Gen-Z learners. This study has explored how micro-learning improves the writing process, by focusing on the unique characteristics of Gen-Z, increases their engagement, attention, motivation and ultimately enhances writing outcomes among Bangladeshi high school Gen-Z students, who struggle with traditional GTM methods.

1.3 Purpose of the Research

The primary objective of the research was to critically assess the effectiveness of combining micro-learning modules (specifically short, focused video-based content) with traditional teacher-led lectures. The aim was to investigate how the hybrid teaching method contributes to improving the writing skills of Gen-Z high school students in Bangladesh. Moreover, this research also aimed to provide valuable insights into the validity and potential of micro-learning as an alternative, viable and effective teaching strategy for improving writing skills.

1.4 Significance of the Research

This research holds potential to advance EFL pedagogy in Bangladesh by introducing the micro-learning approach to teaching instruction. This approach to improving writing skills can serve as a timely and necessary shift towards more learner-centered, technology-integrated teaching as it offers engaging, short and focused learning content

which can be valuable for today's Gen-Z learners. Due to the spontaneous connection with technology and the reduction in attention spans, it has become more difficult to teach students writing skills using the traditional GTM style. From a pedagogical standpoint, this research has offered a new impactful blended approach that will make writing skill more engaging and accessible to the students. As a result, students will move beyond passive memorization to the active construction of knowledge. In this research, the practical benefits have been demonstrated by providing insights into how short, targeted videos, combined with face-to-face instructions, increase students' attention, retention and motivation. This study also holds significance in terms of learner psychology and generational learning trends. The characteristics of micro-learning perfectly match the traits of today's Gen-Z learners. Therefore, in front of policymakers, teachers, and curriculum designers, this study will serve as evidence for implementing micro-learning into the writing skills among high school students. Furthermore, this research will pave the way for further studies in the field of educational technology, curriculum reform, language education and learners-centered pedagogy in Bangladesh. This study will help to inspire in the implementation of more dynamic, effective and inclusive practices that will better suit the realities of 21st-century learners.

1.4 Research Questions

1.Which approach leads to better writing skills development – Traditional lecture-based teaching or microlearning-based instructions along with teachers’ lectures?

2.What are the perceptions of students regarding the integration of microlearning approaches alongside traditional lectures?

3.How does micro-learning approach align with the cognitive (focus and retention) and psychological(anxiety and motivation) traits of Gen-Z students, particularly in the context of learning writing skills in Bangladeshi high school classrooms?

Chapter 2

Literature Review

2.1 Writing as an ability

The English language proficiency involves four key skills: reading, writing, speaking and listening, each contributing to overall fluency of language learners. Among these, writing is often considered the most challenging skill to master, particularly for EFL learners (Lee, 2019). According to Byrne (1979), writing is an immensely tricky activity, requiring the writer to manage multiple elements simultaneously. Writing involves the creation or organisation of ideas, often referred to as prewriting, which presents a significant challenge. These ideas must be developed into a coherent and structured text, necessitating a higher level of language proficiency, a more extensive vocabulary than spoken language and mastery of grammar (Choudhury, 2013). For non-native students, this task is made even harder by the influence of L1, which can lead to errors in grammar, word choices, sentence structures, often resulting in ungrammatical or awkward L2 writing (Zhang, 2023). Furthermore, effective writing is a process that involves planning, writing, editing and rewriting, skills that are not easily learned and taught (Rahmat et al., 2017).

These complexities make writing particularly challenging for EFL learners. This is where micro-learning can play a crucial role by breaking down the writing process on specific skills at each stage of the writing, such as idea organization, grammar, vocabulary etc. As a result, students can gradually build proficiency while avoiding cognitive overload.

2.2 Teaching approach of writing skill in Bangladesh

In the 20th century, Bangladesh shifted from using the GTM to the CLT approach for English instruction, incorporating goals to develop students' abilities in four skills (speaking, reading, writing and listening) and enhance their communicative competence (Rahman & Pandian, 2018; National curriculum, 2012). Though teachers are instructed to use the CLT method to teach writing skills, in secondary high schools they predominantly use GTM (Akter, 2024; Hossain, 2021; Amin & Greenwood, 2018). Although the official policy promotes CLT, the continued reliance on GTM signals a gap between policy goals and actual teaching practices. For Gen-Z learners, who prefer digital, fast-paced environments (Sklenar, 2022), this disconnect limits their ability to fully engage with writing as a dynamic, creative process.

In Bangladesh, English is introduced to students as a subject rather than a language. As teachers follow GTM, students are asked to memorize some specific grammatical rules and vocabularies just to write down some sentences in the initial stage. Then, some specific topics are given to students to learn as forms of paragraphs, compositions, dialogues etc., over a long period of time, from class 6 to 10 (Hossain, 2021). This type of teaching technique hampers their ability rather than improving writing skills, as they focus on memorization and not on writing skill (Amin & Greenwood, 2018). These students need writing instruction that can encourage independent thinking and critical analysis, which is often missing from traditional methods.

2.3 Students Difficulties in writing

Students in Bangladesh face multiple challenges for taking good control over writing skills, where one of the main reasons is the interference of the mother tongue. According to

MacWhinney (2005) and Zhang (2023), the primary source of difficulty to learn a second language for non-native learners is the interference of L1. Zahng (2023) argued that the influence of L1 hampers L2 writing among students, highlighting frequent mistakes in grammar, syntax and semantics, which are typically caused by L1 interferences and unfamiliarity with L2 structures and cultural nuances. In our country, many students' schooling happens in Bangla; even in English classes, teachers use Bangla language almost all the time to teach English (Amin & Greenwood, 2018). As a result, students' thinking process happens through their mother tongue first, and later they transfer the ideas into English, which marginalizes the critical thinking and academic engagement that align with their writing fluency (Sultana & Fang, 2024). In addition, due to the influence of Bangla in English, students have issues with syntax, verb forms, and the absence of auxiliary verbs, causing confusion and errors in sentence structures and grammatical rules (Fathema, 2015). The L1 interference presents a substantial barrier for the students of our country and they may struggle with cognitive overload when switching between languages.

The widespread use of GTM has transformed the writing into a memorization exercise, for a prolonged period, students have memorized specific essays, paragraphs, and dialogues, and have become accustomed to this approach (Akter, 2024). Jokhio (2020) identified that inadequate and unengaging writing topics contribute to students' lack of interest and create monotony in mastering writing skills. In our country, students heavily rely on guidebooks to memories all the essays, dialogues, paragraphs etc, while they seldom consult the government-provided English textbooks (Amin & Greenwood, 2018; Hossain, 2021). Hossain (2021) also added that from class 6 to 10, most of the time, almost the same essays, paragraphs etc. are given to the students for memorizing. When students predominantly depend on such external aids for writing, it adversely affects their

thought process, resulting in difficulties generating ideas, background information, main sentences, developing these into written form, and managing the overall mechanics of writing (Jokhio, 2020; Nenotek et al, 2022). Saifur (2016) observed that during classroom observation of secondary schools, 66% students were incapable of brainstorming before writing, attributable to their reliance on memorization. Furthermore, Hossain (2021) argued that many secondary-level students experience challenges in ensuring lexical cohesion and coherence; only 34% of students were able to brainstorm prior to writing. He added that very few students have a clear understanding of how to construct topic sentences and thesis statements in essays, as they merely memorise these to achieve good examination marks. This memorization process limits students ability to engage actively with writing, as they are more focused on recalling pre-learned content rather than thinking critically and creatively. This passive approach contrasts sharply with the active, dynamic learning process that the Gen-Z students respond well to.

Students frequently feel uneasy when tasked with writing uncommon reports, dialogues, paragraphs, compositions, as they struggle with appropriate vocabulary, proper sentence structures, spelling, punctuation due to GTM teaching approach, the influence of L1, and limited exposure to authentic English usage (Suvin, 2020; Sultana & Fang, 2024). According to Konca (2023), to organize sentences effectively for improving speaking and especially writing skills, vocabulary development is an essential requirement. Muniruzzaman & Afrin (2024), highlighted that in Bangladesh, most students receive education in Bangla and follow the GTM process at secondary level, which restricts their exposure to English. As a result, they don't find the scope to learn vocabulary from the context and do not know how to use appropriate vocabularies in writing.

Grammar is a fundamental and inseparable element of writing. Through the grammatical rules, words are combined and altered in form to construct sentences, which ultimately form language (Harmer, 2001). The key complications faced by students in writing concern understanding various grammatical rules, including the correct use of verb tenses, articles and word forms, which result in challenges in composing coherent and well-structured texts. These difficulties are further exacerbated by low motivation (Bahri, 2009). For instance, Suvon (2020) observed, many students in the secondary level struggle with grammatical issues such as; tense, verb, voice, sentence transformation, and correct verb usages, attributing these problems to their teachers' instructional method. Hossain (2021) noted that high school students tend to use simple sentences predominantly in their writing due to limited knowledge of sentence variation. Moreover, he emphasized that as students often avoid learning vocabulary in context, they frequently make spelling mistakes, which remains a common issue.

2.4 Teachers' struggle of teaching writing

Teaching English effectively to young learners requires teachers to have proper knowledge and adequate skills in English instruction (Bui & Nguyen, 2016). Juhana (2014) argued that at secondary or high school level, teaching how to write essays, composition, paragraphs, and letters is particularly difficult because young learners tend to become bored due to their short attention spans. Therefore, having skilled and competent teachers is essential to manage their challenge. In the view of Rouf & Mohamed (2023), one major reason many English teachers in Bangladesh struggle with teaching writing is due to their limited pedagogical skills. They mentioned that most teachers lack sufficient training on effective writing and do not possess the proper knowledge required for teaching writing skills. Amir (2022) highlighted that in addition to training

deficiencies, many teachers in our country face challenges related to vocabulary, poor handwriting, inadequate grammar knowledge, all of which negatively impact students' confidence. Consequently, students feel demotivated and distrustful when their teachers fail to provide proper instruction due to these limitations, hindering their writing proficiency (Amir, 2022). Unfortunately, some English teachers teach English, who are not even from the English department (Sultana, 2018). Due to insufficient training and lack of familiarity with the CLT approach, many teachers predominantly follow the traditional teacher-centered approach that prioritises rote memorization over creative and analytical writing. This limits students' ability to develop writing proficiency. Moreover, the teacher-oriented classroom environment often results in a strict and uncooperative rapport between teachers and students, leading to poor classroom management and decreased students' engagement, resulting in poor learning outcomes (Rouf & Mohamed, 2023).

Another significant barrier to teaching writing properly in secondary high schools in the classroom environment. The student-teacher ratio is often very high, with classrooms typically containing 60 to 70 students and only 45 minutes of class time. Such conditions make teaching difficult because students have diverse IQ levels and learning styles. Managing the classroom and providing proper guidance and feedback on writing assessments to each student becomes nearly impossible, which ultimately impedes the teaching process (Chowdhury & Bawal, 2024). Many schools are overcrowded and lack essential facilities such as electricity, causing discomfort and distraction for students and making teaching difficult. Furthermore, the lack of digital resources such as; multimedia projectors and limited internet access in many schools adds challenges faced by teachers (Nuby et al., 2019). Students' lack of interest in learning writing skills due to their complexity in vocabulary, grammar, lexical cohesion, which often demotivate them. Since writing

is a combination of these core elements, when students face problems at this level, their interest gradually declines, making it harder for teachers to teach effectively (Suvin, 2020). Moreover, students are motivated to memories for getting good marks in exams due to the exam-centric teaching approach of Bangladesh (Ahmed & Rao, 2012; Mridula & Ahsan, 2025). According to Yunus (2014) motivation is the most influencing or possibly the biggest factor in learning anything. Therefore, due to this influence students show less interest in practicing writing skills which make it difficult to improve students writing skills (Amir, 2022).

The combined effect of limited teacher capacity and training, overcrowded classrooms and low student motivation creates a serious barrier to writing instruction in Bangladesh. This teaching approach needs to shifted for the betterment of students.

2.5 Strategy that can improve writing skill

The most crucial step to enhance the writing skills of Bangladeshi high school students is to eliminate rote memorization and practice a process-based writing approach (Muniruzzaman & Afrin, 2024). Process-based necessitates brainstorming or preplanning and creating a formal outline before writing. It encourages the use of diverse resources beyond textbooks, incorporating active learning and real-world applications, which benefit the writing proficiency (Goldstein et al., 1996). Micro-learning can work as a beneficial approach as it makes content focused and engaged by making content according to the needs of learners by incorporating active learning and real-world application (Giurgiu, 2017). According to Wang (2024) process-based approach improves senior high school students' writing skills through rewriting, drafting, revisiting and editing, which in turn enhances their critical thinking abilities and facilitates the organization of structured

writing. From the findings of Fauziah et al.,(2023), micro-learning as a process based approach improves students' writing skills in terms of content, organization, grammar, vocabulary and mechanics. Moreover, he added, micro-learning helps to improve critical thinking and creativity, it fosters deeper engagement with the content which assists to improve the learners writing skills.

Incorporating technology and multimedia can also augment learners' writing. According to Barrot (2020), both EFL and ESL writing programmers are heavily controlled by the media. Kumar & Mamgain (2023) highlighted that Gen-Z students extensively use short videos related to 'writing', which significantly foster creativity in their writing. Additionally, Bangladeshi students frequently utilize smartphone applications like; Grammarly and Duolingo, which enhance their grammar, structures of writing and vocabulary (Rahim et al, 2023). Fauziah et al., (2023) reported that students who are taught by following a microlearning approach, involving short instructional videos, do better in their writing than the students who are taught by traditional approach. Similarly, Ojochegbe (2025) contended that micro-learning enhances students' retention, engagement and creativity in English language education by providing small, digestible contents along with targeted tasks.

2.6 Characteristics of gen-z

Gen-Z defines the individuals born between the mid-to-late 1990s and the early 2010s (Dimock, 2019). This generation has grown up immersed in the internet, technological advancement, social media contents like; TikTok, Instagram Reels, YouTube shorts etc., which distinguish their preference from previous generations in nearly every aspect, especially in learning (Wajdi et al., 2024). They are the first generation to have never experienced life without the

internet (Polakova & Klimova, 2019). Recognized as true digital natives, they spend a significant amount of time on online platforms where they consume a wide range of contents. The ease of access to internet-based platforms enables them to obtain any information they require at any time. However, due to the extensive exposure, their attention spans eventually diminished (Sklencar, 2022). Furthermore, due to frequent multitasking and exposure to different types of content within brief intervals make it challenging for them to focus on a single task for prolonged periods. This is another contributing factor to the reduction in their attention spans (Cagnin & Nicolas, 2022). Microsoft (2015) revealed that the current attention span of Gen-Z has been reached at approximately 8 seconds. Their shorter attention span has become a notable and distinctive character (Alruthaya et al., 2021). As this generation is deeply surrendered by technology and possesses vast knowledge, it enhances their cognitive abilities, leading them to think critically and analytically when making decisions (Wajdi et al., 2024). They are tremendously motivated, goal-oriented and eager to assume responsibility within their favorable environment where they can improve their ethics, values and leadership skills (Singh, 2014).

2.7 Gen-z's learning behavior

According to Wajdi et al., (2024), Gen-Z learners incline towards visual, interactive, expeditious contents which renders traditional lecture-based learning less interesting, enjoyable and effective to them. In educational settings, they favor ‘demand-learning’, meaning they are more partial to access their preferable learning materials anytime and anywhere by using the digital platforms rather than waiting for teachers or someone to learn the things they want (Atmaja & Khalid, 2023; Cain et al., 2022). Gen-Z values self-directed and experiential learning (Chairunisa et al., 2024; Seemiller & Grace, 2017). As they can effortlessly navigate the digital platforms independently, it promotes learner autonomy and motivates them to avoid dependency as much as

possible on others when acquiring knowledge that attracts them (Hamdi et al., 2022). According to Nokes et al., (2015), Gen-Z is very much guided by self-driven achievement goals, which typically allow them to learn at their own speed. Chan (2018) noted that this generation tends to be independent learners due to utilizing online learning platforms that allow them to tailor their learning materials according to their preference. Gen-Z learners exhibit strong collaborative tendencies, love to do peer interaction or group-based learning rather than passive learning approach (Cain et al., 2022). Moreover, in experimental and applied learning contexts, Gen-z focuses on TBL as they place great value on skills such as; communication, teamwork and problem-solving tasks (Moore et al., 2020). Hirst et al., (2009) advocated for the TBL approach, specifying that effective team learning assists to uplift individual creativity level along critical thinking. For instance, flipped learning classrooms are popular among Gen-z as it allows more meaningful and successful collaborative team work by utilizing learning materials (Yip et al., 2023). Consequently, depending on the circumstances, preferences and objectives, they opt for solo and group learning. For instance; when it comes to mastering specific skills and personal growth, they go for individual learning whereas for tasks like; problem-solving tasks they choose group or peer work (Riana et al., 2024). One of the most discussed characteristics of gen-z is limited attention span. Today gen-z prioritizes concise informative useful contents or microlearning contents that fit with their limited attention span along with daily lifestyle. Quick and easily accessible learning materials is a very useful technique for them to make them engage and enhance their retention in the field of education (Cretu et al., 2020).

2.8 Micro-learning

Micro-learning, specified as the delivery of contents in small, concise and focused segments customized to the needs and demands of learners so that they can assimilate the topic easily in a short time, has become a significant pedagogical approach in the field of digital era (Hug, 2005). According to Fitria (2022), this technique is considered one of the leading and foremost techniques, especially in the twenty-first century, and highly acknowledged in e-learning. Giurgiu (2017) further claimed that micro-learning is a widely recognized internet-based learning and digital media.

According to Padmanabhan (2020), Primarily, the micro-learning concept is commonly applied to corporate employees to train labors efficiently as companies endeavor to deploy their workforce promptly in the field. He also highlighted the necessity of a learning approach that blends both traditional and modern processes by using different accessible devices of media, especially the expanding control of mobile technology. The author underscored that micro-learning techniques have enabled the worker to be proficient by gaining knowledge within a limited amount of time without disrupting their daily task or diverting their concentration. Though it is a preferable technique in the teaching field, the approach was not broadly adopted in the formal education sector.

Unlike traditional methods, micro learning enhances English proficiency levels of reading, writing, speaking and listening by incorporating content into audios, videos, PDFs, PowerPoint slides, info-graphics, interactive quizzes, and different micro-writing tasks like; rapid experience writing, character experience writing, text migration writing, prototype writing etc. which are recognized more operative and less time-consuming like traditional process and product

approaches (Herdian et al., 2023; He & Yang, 2015). Microlearning is considered a better method compared to traditional approach, as it increases the Gen-Z learning outcomes due to its quick, bite-size contents, which mainly perfectly match with the characteristics of Gen-Z (Samala et al., 2023). It also supports just-in-time knowledge acquisition through diverse techniques like mobile and video-based learning, addressing unique challenges faced by this generation (Alias & Razak, 2024). Video content is considered as the most powerful tool among all (Herdian et al., 2023). For instance; Kurniawan et al. (2024), observed that short forms of videos are more efficacious in terms of students' refinements of language literacy, reporting that 34.35% students' writing and vocabulary level improve by providing sufficient information according to their basic needs and demand. Therefore, Fauziah et al., (2023), claimed in their experiment on undergraduate students' writing skill that teachers who use bite-size videos as the material of micro-learning for improving writing skill do better than students who are taught in the classroom in a traditional setting. It is also proven that micro-writing approach not only enhances 'English-major' students' writing skill by promoting concise and comprehensive assessments, but also it strengthens the 'Non-English Majors' students' writing skill (He & Yang, 2015). A study by Chen & Sitthiworachart (2023) found English vocabulary teaching to ESL college students through Superstar app (used as a micro-learning element) has improved learners' capacity, motivation and satisfaction to recall vocabularies compared to traditional methods in the classroom. According to Kohnke (2023), mobile microlearning enhances speaking skill by coming up with short and focused lessons that include role-playing scenarios, interactive activities etc. Video recording features in mobile apps nowadays permit students to practice speaking, writing, reading and listening and receive immediate feedback, fostering improvement in all skills in a short time.

2.9 Theories related to micro-learning

Micro-learning is fruitful due to its alignment with human nature. Cognitive load theory, proposed by Sweller (1988), denotes that every individual has a limited working memory capacity; that is why a learner can process a small amount of information at once. According to the theory, for effective learning, unnecessary information should be minimized to remove unnecessary cognitive load from learners, which will allow them to focus on the important part of their learning materials. According to Mohammed et al., (2018), smaller lessons are easier to digest, and the adaptation of learning process is more convenient as lessons are designed based on the student's requirement, where unnecessary information is excluded. For example, in terms of vocabulary acquisition, learners who use Lingo Snacks platform (micro-learning tool), where at first the most used words are categorized based on their uses, show noticeable improvement in the ability to recognize and recall new words compared to the long-established conventional classroom method's students (Erradi et al., 2013).

A popular theory 'behaviorism' highlights that learning happens through classical and operant conditioning; classical conditioning learning happens when a stimulus is repeatedly connected to a desired response (Skinner, 1965). Likewise, micro-learning uses minuscule short lessons with quick feedback to strengthen learning through repetition (Hug,2005).

Constructivist learning theory, rooted in the work of Piaget (1954) and Vygotsky (1978), illustrates that active engagement in the learning process creates meaningful experiences in terms of constructing knowledge, which can create a positive impact on learners' minds. In micro-learning, micro assignments such as; collaborative problem-solving tasks, scaffolded assignment, active reading exercise, etc., promote deep engagement, collaboration, and development in critical

thinking skills, which assist students in coping up with the transition from lower-level courses to upper-level courses smoothly (Lin & Yang, 2023).

Schmidt's (1990), noticing hypothesis asserts that when learners want to learn a language, they should consciously notice the linguistic features. This aligns with the concept of the theory; microlearning facilitates concentration by delivering the contents into manageable tiny chunks, which correspond to a short attention span, helping maintain students' engagement as cognitive overload is reduced (Mostrady et al., 2024).

Both 'dual-coding' and '21's century education' theories harmonize with micro-learning. In dual-coding theory, Paivio (1986) states that the collaboration of verbal and visual information functions credibly in terms of learning. On the other hand, 21st century skills refer to a set of cognitive, interpersonal, and intrapersonal accomplishments that allow learners to cope up with the recent technology-driven world. These skills are categorized into seven types: technical, information management, critical thinking, communication, collaboration, creativity and problem-solving (Kennedy & Sundberg, 2020). For instance; teaching materials in micro-learning like; videos, PowerPoint slide, pdf, info-graphic, role-playing scenarios, short dialogues, etc competency-based assessments, which are a combination of visual and verbal information, inspire students to take part in a more enthusiastic way in communication as well as think critically and work well together (Herdian et al; 2023; Kohnke,2023; Talenta & Pavita, 2022). Moreover, students feel more empowered by encompassing 21-st century skills as it promotes learner autonomy, students' flexibility, creativity, adaptability and makes them more aware and educated about technology (Todorova, 2024).

Karshen's Affective Filter Hypothesis plays a significant role in shaping the design of micro-learning modules, especially in the context of language and skill development among Gen-Z students. According to Karshen (1982), learners acquire knowledge more effectively when their affective filters – such as anxiety, low-self-esteem, or lack of motivation are minimized. Micro-learning modules, which are short, focused, and digitally accessible (Sklencar, 2022), may lower the effective barriers. For instance, micro-learning brevity prevents cognitive overload (Skelncar, 2022). Additionally, the inclusion of multimedia elements like; animations, interactive quizzes create a more engaging and emotionally supporting learning environment (Hug, 2005). Moreover, the self-paced and personalized nature of micro-learning respects learners' comfort and emotional readiness, making the process more efficient and enjoyable (Seemiller & Grace, 2017).

2.10 Challenges of Micro-learning

In spite of many advantages of micro-learning, some drawbacks have been explored. To make contents of micro-learning more productive, some aspects have to kept in mind which are topics of discussion have to be simpler and tiny yet informative, practical and eye-catching, materials should not be based on theories only, real life examples and experiences must be added, as materials are short, rapid learning has to take place along with the access of contents in smartphone and comprehend swiftly, materials need be modified based the students conditions and demands whenever necessary (Lin et al., 2019). So, to bring out the maximum output from micro-learning, availability of appropriate technology, along with students' and teachers' adjustment with the existing development resources, are the main requirements here. According to Caroline et al., (2023) ensuring reliable and suitable digital platforms and tools may not be universally available for all educational institutions. There are many educational institutions

lacking sufficient content development resources due to their poor infrastructure, imbalance management, economical concern regarding cost etc (Nanjappa et al., 2023; Decker & Schumann, 2017). In addition, there are great quantities of teachers or educators who lack the knowledge of proper application of technology into their teaching which can limit the potential of micro-learning (Caroline et al., 2023). Due to lack of skill proficiency, they often built self-distrust which led to fear of criticism and resulting poor performance in microteaching (Nasution et al., 2023). Moreover, due to limited time, tailoring or customizing micro-learning lesson plans is challenging.

Furthermore, topics that require in-depth explanations are quite challenging to explain through micro-learning as it requires short, tiny and easy content (Ghafar et al., 2023). However, students who are technically challenged may struggle with use of the tools of digital platforms and may struggle with self-directed learning which in result lead them to lower engagement and motivation (Nanjappa et al., 2022). Furthermore, in a classroom setting, different types of students exist who require different types of learning style which may limit the effectiveness of micro-learning (Al-Bhloly et al., 2024).

2.11 Literature Gap

In spite of increasing global interest in microlearning contents, its application in teaching writing in Bangladeshi high school remains undiscussed. If we look at the existing ELT research, most of the research is the traditional method of teaching writing and its challenges, students and teachers struggle due to the traditional method, misuse of CLT and its impact on curriculum, suggestions for improving the proper CLT method, and overall effectiveness of curriculum reforms. The limited studies on microlearning in ELT mostly focus on vocabulary learning,

listening or speaking skill most. Moreover, Bangladeshi ELT research predominantly disclose the secondary high school difficulties with writing skill without considering generational learning shifts in high school. As microlearning content recently has shown improvement in terms of writing skill, it is important to measure the impact of microlearning on writing proficiency, including aspects like; coherence, cohesion and grammatical accuracy. Moreover, comparative studies evaluating the effectiveness of micro-learning versus traditional writing instruction in a classroom setting is also significant to explore whether microlearning enhances students' engagement and learning outcome in a classroom or not. So, addressing this gap, this research will help develop innovative student-centered writing instruction strategies which will align with Gen-z's digital engagement patterns and learning needs in Bangladesh high schools.

Chapter 3

Methodology

3.1 Type of the research

This study predominantly employed a quasi-experimental design to investigate the effectiveness of micro-learning modules in improving the writing skills of Bangladeshi high school students. Quasi-experimental research is an empirical study used in education, health science and other fields to explore causal relationships between variables without full randomization of participants. Unlike true experiments, which use randomization to ensure an equal distribution of variables across groups, quasi-experimental design relies on existing groups or natural settings. This type of research is particularly useful in educational settings where randomization may be impractical (Shadish, 2001). In this study, the main focus was to compare the effectiveness of the micro-learning teaching approach with the traditional teaching system in terms of improving writing skills. Moreover, this quasi-experiment method was adopted to understand the authentic impact and restore the practicality of the research. In our country, classrooms consist of different types of learners who vary in terms of learning capabilities. They are not categorized according to their proficiency level. Another most important reason for adopting this approach was the issue of time limitation. As I had a specific amount of time to complete the project, it would have taken more time to arrange students of the same proficiency level. Before conducting the session, I spoke with the English language teachers of both sections to assess the students' writing proficiency levels. In addition, creating another setting with the same proficiency level of students in the school during that time was troublesome, as for collecting data classes were conducted during the regular timetable of the school. No classrooms were available at that time except a common room. After

comparing the two groups, to assess the attitudes and opinions regarding micro-learning, a survey was conducted in the experimental group, which included 8 questions (5-point Likert scale questionnaires) and two open-ended questions. The data from the survey were analyzed both quantitatively and qualitatively. So, it was a mixed-method research approach.

3.2 Participants and Setting

The participants were taken from rural Bengali- medium government high school. They were from the two sections of class 10 and were about 14 to 16 years old. Pre-existing natural settings were chosen for both sections, where students were assigned to the two sections according to their roll numbers. Both classrooms had whiteboards, multimedia projectors. However, the projector in the experimental group did not work well. Students were arranged in rows, with branches for seating. For this four-day session of classes, everything in the classroom was kept the same as before, no changes were made.

The selection process was non-coercive and voluntary. Students were not forced to participate; rather, they were given complete freedom to attend or discontinue the session at any point if they did not find it engaging and interesting. This decision was intentional and rooted in the desire to observe students' authentic interest and engagement with both teaching styles. This approach not only respected students' autonomy but also enabled a natural comparison of their engagement and enjoyment levels between two groups.

Initially, there were 40 students in total, with 20 in each group. Students of section 'A' were selected for the 'experimental group' whereas section 'B' was assigned as the 'control group'. There were different types of learners, with varying levels of English proficiency in the

classrooms, but both groups had a foundational understanding of English writing. Over time, the control group's number reduced to 14, as six students gradually stopped attending. This was likely due to their lack of interest, which aligned with the study's open participation policy. In contrast, the experimental group maintained regular attendance throughout, showing higher engagement. However, during the final exam of the session, only 17 students attended the exam, as 3 students had their personal issues that prevented them from attending. As a result, the final sample consisted of 31 students: 17 in the experimental group and 14 in the control group.

After completing the quasi-experimental session, a feedback survey was administered to the experimental group. It revealed that none of the students had prior knowledge of 'micro-learning' concept, further validating the novelty of the approach used.

3.3 Data collection

In this study, to collect data, the same assessments were used in both 'experimental' and 'control' groups, except for the method of teaching. The lesson was 'Argumentative Essay' taken from the 'English First Paper', the experimental version, developed by NCTB in 2022 and assigned for the 2024 academic year in class 9. The class time was allocated for each session to be 45 minutes. Based on this time frame, the assessments and teaching sessions were arranged into four consecutive classes about how to write an argumentative essay properly. As I previously mentioned, the projector in the experimental group had some issues, so I decided to use my laptop to show the materials to the students. The laptop was the most important part of the micro-learning session. I decided to show some videos on the topic 'argumentative essay' as materials for micro-learning. I chose to make the videos. The students belonged to a rural Bengal medium high school

whose English proficiency was not strong enough. The British and American accents would have been tough for them. So, I decided to make the videos myself. The videos were less than 5 minutes long. To enhance the students' understanding, I adopted the techniques of flipped classrooms in the experimental group. I gave two options to the students - whether they wanted a Google Classroom or a Facebook group -explaining every single detail about both. Everyone agreed to create a Facebook group. All the students obtained permission from their parents and joined the Facebook group from their parents' Facebook accounts. Before the classes, I uploaded all the videos and materials related to the lesson and asked them to watch those. Even in the classroom, I showed the videos again through my laptops for revision of the topic and better learning. Though the 'experimental group' successfully completed the session exactly in four days, the 'control group' took five days. There, some class activities were conducted to facilitate the learning, but to analyses the result of micro-learning, I selected the final exam script as the data, which was an 'argumentative essay' on the topic 'Should teachers give daily homework to students?' and took place during the last class of the sessions. All the activities I used aimed to make the students' learning process easier to assist their understanding of the topic.

Used lesson Planning

Day	Experimental Group	Controlled group
Day 1	Introduction session (about10 minutes)	Introduction session (about 10 minutes).
	A video (About 4 minutes) on brainstorming techniques was shown before starting the	Lectures on brainstorming techniques took about 15 to 18

Day	Experimental Group	Controlled group
	lecture. After finishing the video, a lecture-session (about 5 to 6 minutes) was held for deeper understanding. Overall: 10 to 12 minutes	minutes. (Allocated time was 10 to 12 minutes.)
Activity (Peer-work)	Topic: ‘Co-curricular activities are as important as academics’. The topic was given for brainstorming. (Finished within 10 to 12 minutes)	Same task was given which took around 18 to 20 minutes. (Allocated time was 10 to 12 minutes.)
	After conducting the task, a brief discussion about ‘argumentative essay’ took place. (About 10 minutes).	The brief discussion about argumentative essays left unfinished. (Allocated time: about 10 minutes)
Day 2	Revision of previous session (About 5 minutes)	Revision of previous session and finish the remaining discussion about argumentative essay (About 10 to 12 minutes).

Day	Experimental Group	Controlled group
		(Allocated time: around 5 minutes).
	showing videos about the ‘introduction’ part of the essay (around 5 minutes). As students understood perfectly, no lecture was required. (Around 7 to 8 minutes). (Allocated time: 15 minutes minutes)	Gave a lecture about the ‘introduction’ part of the essay. (Around 10 minutes minutes). (Allocated time: 15 minutes)
Activity (Group work)	Activity name: ‘Spot the thesis’ Three introductory paragraphs were given in a sheet. They asked to identify the stronger and weak thesis statements and rewrite those that did not meet the criteria. (Took around 15 to 17 minutes).	Same activity. (Took around 30 to 35 minutes) (Allocated time was 10 minutes).
	A video (about 5 minutes) on the body paragraph was shown. Later, a lecture was given to align with the video, explaining the body paragraph again (around 13 to 15 minutes).	Class Time was finished.
Day 3	Revising the previous lesson (around 5 minutes)	Revise the previous lesson (5 minutes)

Day	Experimental Group	Controlled group
	(Allocated time was around 5 minutes)	
		Gave lecture about body paragraphs (Around 20 minutes) (Allocated time: 20 minutes)
Activity (Solo activity)	Students were asked to refer to the previous sheet worked on thesis statements and choose any one from the three introductory to paragraph choose anyone and write body paragraphs. (Took around 20 minutes) (Allocated time was around 25 minutes)	Same activity was given (most of students did not finish, asked them to finish it home)
	Later a video (3 minutes) on how to write a conclusion.	
Day 4	Revision of all the things (took around 10 minutes)	Revision of all previous things (took 10 minutes).
		A lecture on how to write conclusion was given,

Day	Experimental Group	Controlled group
		summarizing all the previous lessons. (Around 20 to 25 minutes)
Activity (Solo activity)	Exam was taken on a specific topic (around 30 minutes) After the exam, a survey questionnaire was given to everyone to fill out.	
Day 5	Not applicable	Same exam was taken like an experimental group. (Took around 40 to 45 minutes) (Allocated time was around 30 minutes)

After conducting the sessions of the ‘experimental group’, a survey questionnaire was distributed among the participants to know their attitudes, opinions and understanding towards the micro-learning approach. The survey consisted of ten Likert scale questions designed to capture perceptions of the micro-learning approach, mainly concentrating on the efficiency of short videos for enhancing their writing skill. However, two open-ended questions were attached to obtain deeper insights of students’ personal experiences with using the method.

3.4 Data analysis Process

The principal focus of the study utilized a quasi-experimental design to examine and establish a hypothesis. For quasi-experimental research, the scores I assigned to the students' writing scripts or essays were based on the scoring rubric of Brown (2003). This rubric was chosen due to its established realizability, widespread recognition, and suitability for second-language writing assessment. The rubric divides writing assessment into five components—content, organization, grammar, vocabulary and mechanics—allowing for a detailed evaluation of learners' writing performance (Brown, 2003). It has been widely used in EFL contexts and is especially valued for its clarity and practicality (Omer & Muhammed, 2020). Shehab (2011) noted that teachers find out that 'Brown's rubric' is easy to use and effective for measuring specific aspects of writing. Therefore, its psychometric strength and alignment with key writing skills make it a suitable instrument for evaluating students' writing process in this study. This study has investigated whether micro-learning modules enhance Gen-Z Bangladeshi students' argumentative-essay writing skills. Brown's criteria map directly onto those constructs:

Alignment of Study Constructs with Brown's scoring rubric

Study construct	Brown rubric criteria	Justification
Argument depth and relevance	Content	Assessed thesis, supporting points, and counterarguments essential for argumentative writing.
Logical flow and structure	Organization	Evaluates paragraph order, transition, and overall coherence.
Grammatical accuracy	Grammar	Focuses on tense, agreement, and sentence structure.
Vocabulary range and	Vocabulary	Measures word choice

appropriateness		perception and academic tone.
Surface-level correctness	Mechanics	Covers spelling, punctuation, and formatting accuracy.

After checking the scripts by myself, I went to the English teachers of class 10. Since I am not experienced in script evaluation, I approached and requested them to review the scripts. Before they did so, I briefed on the Brown rubric, provided a sheet outlining the scoring system, and explained the details thoroughly. Once the scores were received, I performed an independent t-test to determine whether the micro-learning modules had an impact on improving writing skills. For this t-test I input the scores into SPSS, and both the Shapiro-Wilk test and Levene's test were conducted to find out the values of the independent t-test.

For the survey analysis, both quantitative and qualitative analysis was done. In Likert-scale questions, I manually conducted the percentages since the number of students was not large. After calculating the percentages, I carried out descriptive analysis for discussion. Additionally, I added two open ended questions to understand the learners' personal opinions. They wrote their responses in Bangla, which I later translated into English. As they were from a Bengali- medium school and their proficiency in English was limited, I have asked them to write their answers in Bangla. I reviewed the responses, identified relevant themes, and analyzed the data thematically.

3.5 Ethical Consideration

Before collecting data, detailed information regarding the research objectives and procedures was communicated to the school authorities, class teachers and the participants of both sections. Informed consent was obtained verbally from the students, and they were assured that

they could withdraw from the sessions at any point without facing any consequences. No one was forced to do the classes and their comfort and autonomy were prioritized throughout the process. To protect the school's identity, the name of the school has not been mentioned anywhere in this thesis, in accordance with the school's request and standard research guidelines. All information collected has been kept strictly confidential. No names or identifying details of the school, teachers or students have been included in the report.

Chapter 4

Findings

This section presents the key findings from the research aimed at evaluating the effectiveness of micro-learning on high school students' writing skills. The findings are categorized into various components, starting with descriptive analysis of the scores and performance indicators of both the experimental and control groups. Key statistical methods like; normality testing, homogeneity testing and hypothesis testing were applied to determine the significance of the results in quasi-experimental research design. Furthermore, this study also includes insights derived from a survey of student responses regarding their experience with the micro-learning modules. This research not only provides a comparative assessment of writing skills but also explores students' subjective views on the effectiveness of micro-learning in improving their writing techniques. Through this detailed examination of the quantitative and qualitative data, the findings aimed to answer the central research questions.

4.1 Response from the quasi-experimental design

Table 1. Score of Descriptive Statistic Scores

Class	Number of students	Mean Score	Maximum Score	Minimum Score
Experiment	17	77.76	94	65
Control	14	70.21	77	61

From the above table 1, it can be seen that the average score of the experimental group is 77.76, whereas the control group's score is 70.21 which is lower than the experimental group. Similarly, the maximum and minimum scores from the experimental group are higher, at 94 and 65, respectively. On the other hand, the control group has a maximum score of 77 and a minimum score of 61.

Table 2. Writing Text's Indicator

Indicator	Experimental class (%)	Control class (%)
Content	82.06%	74.52%
Organization	77.94%	70.46%
Grammar	75.21%	66.5%
Vocabulary	71.53%	63.67%
Mechanic	73.92%	69.14%

The analysis of five components of writing (content, organization, grammar, vocabulary and mechanics) shows a consistent trend, where the experimental group demonstrates higher scores compared to the control group. Based on Table 2, the frequency in content for the experimental and control groups are 82.06% and 74.52% respectively. Moreover, the frequency of organization in the experimental group is 77.94%, whereas the control group is 70.46%. Additionally, the frequency of grammar in the experimental group is 75.21%, while the control group is 66.5%. The frequency level of vocabulary is 71.53% for the experimental group, whereas

the control group has a frequency of 63.67%. Lastly, in mechanics, the experimental group's frequency is 73.92% and the control group is 69.14%.

Table 3. Result of Normality Testing in Experimental Class and Control Class

Class	Asymp. Sig.(2-tailed)	α (Significance level)	Distribution
Experimental	0.273	0.05	Normal
Control	0.169	0.05	Normal

The Shapiro-Wilk test was performed to assess whether the data from both the experimental and control groups followed a normal distribution. The results of the test, as presented in Table 3, show p-values of 0.273 for the experiment group, and 0.169 for the control group. Since both p-values are greater than the 0.05 significance level, it can be concluded that data from both groups follow a normal distribution. Given that the assumption of normality is satisfied, parametric tests can be applied, as the significance value is greater than the asymptotic significance (2-tailed) value, which further supports the use of parametric analyses.

Table 4. Result of homogeneity testing for experimental and control classes

Data	α (significance level)	Asymp. Sig.	Distribution
Significant value	0.05	0.58	Homogenous

Levene's test was performed to check the homogeneity of variance between two groups. Table 4 shows that the asymptotic significance value (0.58) is higher than the significance value (0.05), indicating that the variance in the writing test is homogenous. As there is no significant variance between the two groups, hypothesis testing was conducted.

Hypothesis Testing

H1: Microlearning teaching has a notable impact on the writing skills of high school students.

H0: Microlearning teaching does not have a notable impact on the writing skills of high school students.

Hypothesis testing is considered a key concept in determining whether a detectable impact exists between two variables. Therefore, to assess whether microlearning is truly impactful, hypothesis testing was carried out.

Table 5: Result of conducting independent t-test for both groups

Data	t-observed value	t-table value	Conclusion
Argumentative essay	2.86	2.405	t-observed value > t value

Table 5 displays the result after conducting the independent t-test of the writing test. Here, the t-observed value is 2.86, whereas the t-value is 2.405. Hence, t-observed value is greater than t-value. This indicates that H1 is accepted and H0 is rejected. In other words, it can be concluded that micro-learning has a significant effect on students' writing skills compared to the traditional teaching methods.

4.2 Survey response

4.2.1 Quantitative response

Table 6: The Response of Likert Scale Questionnaires

Survey Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Combination of short videos and lectures is more effective than just lectures	7	5	3	2	
Micro-learning assists retain key writing concepts more effectively	7	5	3	2	
The videos help recalling writing strategies	7	5	3	2	
The videos were clear and easy to follow	7	5	3	2	

Survey Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Watching videos before class helped feel more prepared	7	5	3	2	
I would like more lesson using microlearning videos with lectures	7	5	3	2	
The videos matched my learning style and helped to stay focused	7	5	3	2	
Microlearning session helped feel less anxious about writing	7	5	3	2	

From table 6, it can be seen that the majority of the students (7 students strongly agree and 5 learners agree; overall, 12 students out of 17) about 70.58% students, responded positively to the questionnaires given to them. The idea that a combination of short videos and lectures was far

more fruitful in developing writing skills than lectures alone was agreed upon by 70.58% students. Similarly, the same number of students agreed that micro-learning helped them retain key concepts more effectively, including other benefits, such as; assisting in recalling and applying writing strategies better compared to the traditional method, feeling more prepared in class after watching the short videos, finding the videos clear and easy to understand, and feeling less anxious about writing. These 70.58% of learners agreed with the statement that this type of learning session matched their learning style and helped them stay focused, and they showed a desire for more micro-learning sessions. However, while the result was predominantly positive, a small proportion of learners (2 students disagree and 3 remained neutral) approximately 11.76 % fully denied the effectiveness of micro-learning, whereas about 17.64% learners either did not fully agree or remained neutral about the statement that micro-learning is really effective for enhancing writing techniques. Some students preferred traditional lectures, claiming the videos were not clear enough for them and did not meet the demand of their learning preferences.

In this survey, two open-ended questions were attached to offer deeper insights into students' experiences with micro-learning and to know their perspectives on the difference between micro-learning teaching method and the traditional lecture-based teaching method. A greater number of students expressed positive views, whereas a few were not fully satisfied with the process of micro-learning. Based on their response, the findings were organized into a few themes: 'clarity and structured approach', 'increased engagement and focus', 'better retention of key concepts due to concise content', 'improved understanding through visual representation' and 'limited effectiveness for some students'. The findings are presented thematically below.

4.2.2 Enhanced Focus and Engagement

Many students appreciated the brief nature of micro-learning videos, which helped them stay focused and engaged. They reported that the videos, along with the lectures, made it easier to understand the topic in less time, without feeling overwhelmed. For example;

I did not feel bored or distracted. In traditional lectures, my mind would drift after a while, but these videos were short and to the point. (Student A)

Since they were only five minutes long, I stayed engaged the entire time. In a normal lecture, I sometimes got distracted, but these videos kept me focused. Student B)

In traditional lectures, I sometimes get distracted and miss important points. The micro-learning videos were short and focused on the key ideas. (Student C)

They kept my attention, and I could remember the key parts when writing my essay. (Student D)

4.2.3 Better Understanding through Simplified and Structured Content

Many students found the contents were easy to absorb, the ideas of the topic seemed simplified and manageable due to its concise structure. For instance;

I liked that the videos gave me a structured approach to writing. Instead of just listening to a teacher talk for an hour, I got a visual explanation in a short time, which made it easier for me to process unlike the traditional approach. (Student E)

They explained argumentative essays in small steps, so I didn't feel lost. (Student F)

The step-by-step explanation in the videos was the most helpful. It showed exactly how to write each part of an argumentative essay, which made the writing process clearer for me. (Student G)

I noticed that my understanding improved because the videos broke down the topic into small, clear sections. In a regular lecture, the information sometimes felt too dense, but this method made it easier to absorb and remember. (Student H)

4.3.4 Improved Learning Autonomy and Control

Students appreciated the ability to control their learning pace. They could replay, pause and review difficult parts of videos, which is not possible in traditional lectures. For example;

This type of teaching helped me stay focused because the videos were short, and I did not feel overwhelmed with too much information at once. In a traditional lecture, I often lose track of what the teacher is saying. However, with these short videos, I could rewatch them whenever I needed to clarify something. (Student I)

I appreciated that this type of teaching method gave me more control over my learning. Since the videos were short, I could focus on specific parts that I found difficult. In a regular lecture, if I miss something, I cannot go back. But in this teaching method, I could replay the videos anytime. (Student J)

I think the best part was that the videos were easy to go back to. If I did not understand something, I could rewatch it. In our regular lectures, if I miss a point, I don't always get a chance to hear it again. (Student K)

4.4.5 Visual Auditory Learning Support

Students pointed out that both the visual and verbal explanations captured their attention. According to them, the integration of visual aids with lectures helped them understand the writing process more clearly. For instance;

The visual and verbal explanations together helped me understand better. When I only listen to a teacher in a traditional method, I sometimes forget many important things later. But seeing the concepts in a video made them easier to remember. (Student L)

The visuals in the videos really helped me. Seeing and listening to how to structure an argumentative essay, rather than just hearing about it, made it easier to follow when I wrote my own essay. (Student M)

The best part was that the videos gave real examples of how to write a good argumentative essay. Instead of just being told what to do, I could actually see how to structure my writing. (Student N)

4.5.6 Limited Effectiveness for Some Students

Though most of the students found the micro-learning method to be beneficial, few learners denied it and expressed dissatisfaction with the brevity of the videos. They felt that method did not make any difference in their learning process and was not beneficial to them. A few students still preferred longer, more detailed video explanations, particularly for complex topics. A student also raised questions about teacher qualification and classroom. For instance;

I prefer our teacher's teaching method because I like detailed explanations. The videos felt too fast, and I did not have enough time to absorb the content before moving on. I think traditional classes give me a better chance to understand complex topics. (Student O)

I liked that the videos made things simple, but I still find our regular approach is good. Though the videos gave a summary of the topic before the class, they did not have an effect on me. (Student P)

The videos were very short. I did not like it. (Student Q)

Chapter 5

Discussion

This section provides a comprehensive analysis and interpretation of the findings obtained from the intervention, which utilized micro-learning modules to enhance the writing skills of Gen-Z EFL learners in Bangladeshi high school classrooms. The discussion is divided into two primary parts, a detailed overview from quasi-experimental intervention, and secondly, a descriptive discussion of the Likert scale questionnaires, along with a thematic exploration of the students' experience and perspectives on the effectiveness of micro-learning based on open-ended questions. The findings indicated that students in the experimental group consistently outperformed the control group in all writing components. Additionally, students' attitudes towards micro-learning were overwhelmingly positive, as evidenced by survey responses that highlighted improved focus, greater retention and a reduction in anxiety. However, from survey response, pointed out that micro-learning may not meet the needs of all students equally due to its concise nature. Moreover, by critically examining both the success and challenges, experiences from both groups during the session, along with limitations of this research in the context of educational interventions and students learning, were also disclosed.

5.1 Advantages of the Intervention

The descriptive statistics (mean, maximum and minimum) and writing test indicators scores give a clear picture of students' writing performance. The experimental group achieved higher mean, maximum and minimum scores in terms of writing compared to the control group. Similarly, in writing test indicators the experimental group scored higher than the control group.

These score differences show that the Gen-Z students learn better with short and simple lessons. It also means that lessons should be given step by step, instead of all at once.

In terms of content, students in the experimental group demonstrated stronger ability to stay on topic and present ideas in a more structured way. Their responses were focused and included appropriate supporting details, showing a better ability to organise their thoughts. For instance, the experimental group showed better performance in terms of writing, thesis statement, topic sentences and counter arguments with proper supporting details than the control group. It implies that the segmented nature of micro-learning supported the development of metacognitive strategies, helping students plan and structure their writing, something often lacking in traditional Bangladeshi classrooms that rely on heavily GTM approach. The improvement in thesis statements and logical flow shows that short video lessons gave students time to stop and think in between. These breaks helped them practice how to plan their writing which will gradually improve their brainstorming. This matches with A's self-managed learning which means micro-learning helps develop higher-planning skills. So, it can be said that lesson creators can add clear steps like 'plan-draft-pause' in video based micro-learning sessions. For teachers, this means guiding students on how to think and plan, instead of just repeating the lesson.

With regard to organization, the experimental group's writing was more coherent. They frequently use proper transition words such as "Firstly", "Moreover", "However" etc. On the other hand, the control group's writing was less structured and lacked smooth progression. Only 2 to 3 students used transition words where almost 14 to 15 students used transition words. This frequent use of discourse markers suggests that students began to internalize genre-specific writing

conventions, likely because the micro-learning modules offer repeated exposure and opportunities to practice. Students watched a few example essays in the micro-learning videos, which helped them understand the type of the writing structure of argumentative essays. Later, they used the patterns in their writing and to make coherent writing they used proper transitional words for transferring one body paragraph to another body paragraph. Here it can be seen that, in micro-learning, showing examples with proper practice makes writing skills more enriched.

As for grammar, while both groups made errors, the micro-learning showed fewer mistakes in subject-verb agreement and verb tense consistency. This suggests that micro-learning's repeated, bite-sized lessons helped students remember grammatical rules better over time. Instead of teaching grammar in large chunks at the beginning, a more distributed method, aligned with micro-learning's structure, can be more effective by providing ongoing, context-rich exposure. Students in the experimental group made fewer grammatical mistakes because the same grammar rules were repeated in different short lessons and videos of argumentative essays. Grammar part was not taken separately, it was taught using real examples from the same writing topic, which made it easier to understand and use correctly.

Vocabulary usage also showed notable differences. Students in the experimental group used more precise and varied vocabulary like, 'beneficial', 'challenging', 'valuable', compared to the simpler words like 'good' and 'bad' used by the control group. This reflects regular exposure to meaningful, content-rich video inputs helped learners expand their vocabulary and learn new words in context, an approach more effective than traditional memorization. The micro-learning videos often used useful academic words and showed learners in both spoken and written form.

These words were used again in the 4 day's lesson planning's tasks repeatedly based on the context, which helped them learn and remember vocabularies. Teachers can include important vocabulary on purpose and they can ask students to keep simple word journals after each lesson to help them remember and use the new words.

When it comes to mechanics, such as; spelling, punctuation, and capitalization, the experimental group performed slightly better. This could be the result of a micro-learning manageable teaching approach that helped students maintain focus and avoid fatigue. In micro-learning sessions, students understood the topic more quickly than the control group and fulfilled every given task in the class. As a result, they went through writing practice on a regular basis. These types of small, easy tasks helped them avoid common mistakes that usually happen in long writing tasks.

Overall, these descriptive trends support the conclusion that micro-learning had a positive and measurable impact on the writing performance of Bangladeshi high school students, particularly in enhancing their content development, organization's clarity and grammatical accuracy. These align with the findings of Fauziah et al.,(2023) where they argued micro-learning approaches improve writing skill of learners in terms of content, organization, grammar, vocabulary and mechanics compared to the learners who are taught by the traditional methods. Moreover, it can be said that micro-learning can be a powerful teaching approach, especially in places like Bangladesh where it can serve as a 'gateway pedagogy'- a method that opens new ways of teaching and learning. Presenting lessons in small and focused chunk in the experimental group, supported their learning process with focus, flexibility and clarity. This process will give teachers

more control, allowing them to decide what to teach and when, based on students' needs. This will lead to better student understanding and engagement. Therefore, education leaders and policymakers should consider including micro-learning materials in the national English curriculum. These ready-to-use or adjustable materials would help teachers create more effective, student-centered lessons.

5.2 Survey response

5.2.1 Quantitative Response

From the findings, it can be said that the quantitative analysis of the Likert scale has revealed strong support for the effectiveness of micro-learning modules in enhancing writing skill among Gen-Z EFL Bangladeshi high school students. A significant majority of students (7 strongly agree, 5 agree) around 70.58% responded positively by highlighting that micro-learning approach, or the combination of short videos and lectures, was far more fruitful than the traditional methods. This was the reflection of their beliefs in the superior impact. It has reinforced the theoretical stance of Dual coding theory (paivio,1986), which emphasizes that learners digest the information better when it is delivered both verbally and visually. Similarly, the same number of learners accepted that micro-learning helped them retain key concepts effectively, along with recalling and applying writing strategies in a more effective manner compared to traditional methods. These statements have acknowledged the principles of Cognitive Load Theory (Sweller,1998), which advocates for breaking complex information into smaller, manageable chunks to avoid overload and enhance cognitive progress. The positive survey responses support something deeper about students' motivation. When students believed that micro-learning was helpful, they were more likely to stay engaged and keep trying. This means students' positive attitudes can directly affect

how well they learn. According to Yunus (2014), motivation plays a key role in keeping students involved in learning over time.

Furthermore, about 70.58% of students endorsed the videos' clarity and relevance to their learning style by preferring the statements that those 5-minute videos were easier to understand and follow which matched their learning style by keeping them focused on the lessons. These positive attitudes confirmed that students' learning happens more appropriately when interactive content and technology are integrated (Barrot 2020; Giurgiu 2017). In addition, findings of Sklencar (2022) and Wajdi et al. (2024) also align with the statements where they mentioned that micro-learning tends to favor the Gen-Z learners due to its concise, interactive and visually driven content, as these learners possess qualities of a shorter attention span and familiarity with digital environment.

An encouraging insight has emerged from the emotional and motivational aspect of learning, since a large portion of learners (about 70.58%) agreed that micro-learning sessions made them feel less anxious about writing, illustrating the reduction of anxiety. Anxiety in writing has become a common barrier in Bangladeshi writing classrooms as memorization, grammar focused instruction, teacher-centered methods dominate here (Akter, 2024; Hossain, 2021). According to Karshen's (1982), 'Affective Filter hypotheses, when learners experience high levels of anxiety, fear of making mistakes, it can lead to reduced engagement, decrease comprehension and ultimately hinder language acquisition. Micro-learning helps reduce the pressure by breaking down lessons into small parts and letting students understand the material without feeling overwhelmed and rushed (Hug,2005; Sklencar,2022). Thankfully, students expressed their interest

in continuing to learn through the micro-learning method, reflected in 70.58% learners responding positively to the statements that they would like more classes using microlearning sessions (mixture of short videos and lectures). This revealed a strong motivation for openness towards adopting new learning strategies, supporting the findings of Barrot (2020) and Fitria (2022), who emphasized the positive influence of digital media on learner autonomy and engagement. From the positive responses, it can be stated that this micro-learning approach creates a more relaxed and confident learners' mindset, which is especially important in EFL contexts like Bangladesh, where traditional grammar-heavy instructions do not work well. So, micro-learning promotes emotional security, encourages persistence, and supports a learner-centered approach where both material and the teacher create an environment that will help learners to be motivated academically.

However, beyond these affirming responses, there were neutral responses (3 students consistently responded neutrally) for all key responses, including the effectiveness of micro-learning, recall of strategies, reduced anxiety etc. This indicated a level of uncertainty or mixed feelings towards the micro-learning sessions. It suggested that, perhaps due to variation in cognitive style, digital exposure, personal preferences, while the intervention was beneficial for most, it did not strongly resonate with few learners. For example, none of the learners in the experimental group were aware of these micro-learning lessons before conducting the session. For some students, this unfamiliarity created a fear of adopting completely new methods, which did not seem beneficial to them. Equally important were the negative responses, though they were very few: 2 students disagreed with all the effectiveness of micro-learning. According to Caroline et al. (2023), students may struggle with adapting to a new learning culture that micro-learning

promotes. Moreover, the necessity of adapting to technology can pose barriers, especially if students are unfamiliar with digital tools or platforms used for micro-learning. Furthermore, Al-Bhloly et al. (2024) highlighted that the need for personalized learning paths may not always be met, leading to less effective educational experience which leads to lack of motivation. From these responses, it has been revealed that micro-learning may not be universally effective for some students due to the rapid pace, small content, lack of in-depth explanation, unfamiliarity with video contents, and personal learning preferences. These factors may have created barriers to engagement or comprehension. These findings align with challenges identified by Maria & Anna (2022) and Caroline et al., (2023), who highlighted that micro-learning can be ineffective if students are not properly supported, due to its short content which lacks clarity in explaining complex concepts, making it potentially less adaptable.

Overall, this descriptive discussion has predominantly confirmed that the combination of microlearning with teacher lectures has a positive impact on learning, though few students found it ineffective. It can be said that for most students, micro-learning not only improved their writing performance but also reduced anxiety, aligning with their learning preferences and styles, resulting in a more meaningful and engaging classroom experience. In contrast to the GTM method still practiced in Bangladesh classrooms, this highlights the need for a paradigm shift in writing instruction towards a more student-centered, digitally integrated method. Thus, the large number of positive responses, coupled with the very few neutral and negative responses, highlight the need for differentiated instruction and thoughtful integration of micro-learning tools. These tools should not only consider cognitive and generational factors but also learners' individual comfort level and readiness. As micro-learning holds significant promise in improving writing proficiency, careful

design and inclusive delivery of topics in micro-learning sessions may ensure equitable learning outcomes across diverse learners. According to Ojochegbe (2025), successful and careful implementation within educational settings and objectives to address challenges related to task coherence and content development, may result in a nearly equitable learning outcome for learners. Teachers can strategically choose micro-units based on learners' progress, providing ongoing feedback, and adjusting the content to suit the learners needs.

Thematic Discussion

5.2.2 Enhanced Focus and Engagement

One of the most commonly reported benefits of micro-learning modules was the increased ability of students to focus and stay engaged throughout the learning sessions. Several learners had appreciated that the brief, concise and simple nature of videos had averted cognitive fatigue and helped them remain attentive. For instance, the 'student D' had indicated that he did not feel bored and distracted, unlike traditional sessions, as videos were short and to the point. Similarly, the 'student B' had stated that since videos were only 3 to 5 minutes long, he had stayed engaged. According to Chowdhury & Pandita (2023), Gen-Z learners demonstrated a preference for micro-learning due to its ability to enhance engagement as the materials were clear and easy to understand. As a result, this engagement and preference help to motivate them to continue learning and retain information. According to Ojochegbe (2025), micro-learning is one of the efficient methods for making students engage with learning, which acts as motivation for them to enjoy and continue the learning. Gen-Z learners are well-recognized for their shorter attention span because of the consistent exposure to digital content (Sklencar, 2022). Alruthaya et al. (2021) argued that

Gen-Z's average attention span is approximately 8 seconds, focusing on the dominance of offering concise contents like micro-learning. Additionally, the learners were in favor of micro-learning due to its focused nature. According to Wajdi et al. (2024); Cain et al. (2022), this generation prefers interactive and fast-paced learning environments, making traditional approaches less effective. In Bangladeshi classrooms, students' engagement with class is a big issue due to the teacher-center method and limitation of classroom equipment (Amin & Greenwood, 2023). Hence, micro-learning can offer a refreshing alternative that can align with students' digital behavior and learning expectations. This strong engagement observed during micro-learning sessions suggests more than just interest, it reflects a growth in learners' writing self-efficacy. This belief will strengthen motivation and persistence, especially for longer or more challenging tasks.

5.2.3 Better Understanding through Simplified and structured Content

Another notable theme for the students' improvement in comprehension of writing strategies was 'structured and simplified versions. Students acknowledged the videos' step-by-step explanation of the topics. For example, 'student G' noted that he/she received the topic's explanation in a short time due to its structural step-by-step breaking down of the topics. Likewise, the 'student H' stated that due to the small and clear instructions of the videos, his/her understanding had improved. These outcomes support the principle of cognitive load theory (Sweller, 1988), which suggests that learning instructions for the topics should be limited by cutting down extra and unnecessary information to support students' cognitive development. Moreover, according to Kumar & Mamgain (2023), Gen-Z prefers video-based learning, which aligns with micro-learning principles by offering concise, engaging content. This approach caters to their behavioral tendencies for quick, simplified, structured information consumption and

sharing through digital platforms, enhancing their learning experience. Samala et al. (2023), affirmed that micro-learning significantly enhances learning outcomes for Gen-Z by delivering smaller, bite-size, easily digestible content tailored to their learning preferences. In our country, the dominance of GTM, emphasizing memorization over process-based learning, has often failed to support students' cognitive development in writing (Hossain, 2021; Akter,2024). The microlearning method, by contrast, fosters deeper understanding through segmentation and clarity, helping learners internalize and apply writing strategies that are overlooked in GTM-based classrooms.

5.2.4 Improved Learning Autonomy and Control

A majority of students illustrated that they had experienced learner autonomy when they learned through micro-learning contents. They felt empowered to learn at their own pace by replaying the video parts they found difficult, thereby enhancing their control over the learning process. 'Student J' and 'student I' claimed that they had appreciated the micro-learning modules as they had taken control of their learning. According to them, in micro-learning, the learning was easy and enjoyable from the short video content along with the lecture. Since there was a scope to replay videos anytime anywhere when they found anything difficult from the contents, unlike the traditional approach. These findings closely match with the learning style of Gen-Z and the theory of '21-st century skills. According to Chairunnisa et al. (2024), Hamdi et al. (2022), Atmaja & Khalid (2023), Seemiller & Grace (2017) and Chan (2018), today's Gen-Z notably values independence, flexibility, and often prefers tailored learning materials that cater to according to their needs, making microlearning a natural fit for their learning behavior. Granting students autonomy in subject matters and instructional methods enhances their motivation and involvement,

allowing them to engage with content that aligns with their individual interests and aptitudes. In contrast, the GTM, still common in Bangladesh, limits flexibility and promotes rote memorization (Hossain,2021).

Another strength point that came out of the findings was portability of micro-learning. Students expressed the feeling that due to the flexibility of micro-learning, allowing them to access, which supports learner autonomy, is one of the crucial characteristics of ‘21-century skill’. According to Todorova (2024), the use of technology in micro-learning fosters digital literacy, another core component of 21st-century skills. In addition, in the findings, students expressed that they felt more empowered to learn at their own pace by the use of technology, which was a very good sign. This feature is particularly useful or beneficial in Bangladesh, where classroom limitations and lack of resources often hinder continuous learning. Alias & Razak (2024) addressed that micro-learning facilitates on-demand knowledge acquisition using various methods, such as mobile and video-based learning, catering to the specific challenges of this generation. However, it is known that writing requires strategies like; brainstorming, drafting, revising etc. which predominantly depend on the learner's strong exposure to writing practices and repeatable instructions. Wang (2024) has suggested that process-based writing improves critical thinking, and microlearning supports this by offering focused and repeatable instructions. Therefore, by promoting both flexibility and learners’ ownership, microlearning fills a crucial gap in traditional writing education in Bangladesh.

5.2.5 Visual-Auditory Learning Support

A significant number of students stated that a combination of visual and auditory inputs had made the learning process easier for them. The multimodal presentation style had helped them retain key concepts of the topic. ‘Student L’ claimed that due to watching their topic in a video, learning became easier as he/she easily remembered the main part of the topic. Additionally, ‘student M’ said that watching the content of the topic had made his/her learning easier in terms of structuring the writing. These findings reflect Dual Coding Theory (Paivio,1986). It suggests that learning improves when content is delivered through both verbal and visual channels. According to Fauziah et al. (2023), when visual and verbal input integrate together, it helps students retain key concepts more effectively, especially in writing where structure and organization matter greatly. Moreover, Kurniawan et al. (2024) stated that short videos as a form of micro-learning, has been improving language literacy skills, with a reported 34.35% increase in skills such as writing and vocabulary mastery. Amir (2022) argued that having the ability to retain key concepts is crucial for writing proficiency, especially for EFL learners in Bangladesh as students struggle in structuring in writing. Microlearning addresses this gap by using visual reinforcements-such as highlighting sentence structures, step by step process of writing, bullet point summaries etc. that can help students apply and recall the main concept during writing. In Bangladesh, where visual support is rarely used, students often struggle generating ideas, lexical cohesion and coherence, writing thesis statements, topic sentences, grammatical accuracy etc (Hossain,2021), microlearning can be a clear, memorable way in presenting the techniques of writing. Additionally, this format aligns with Gen-Z learners’ preferences for fast, visual content, helping them stay engaged while reinforcing essential writing strategies (Wajdi et al., 2024).

5.2.6 Limitations of Micro-learning

Although the majority of the learners supported microlearning, a small subset of students expressed their concern by saying that micro-learning videos lacked sufficient depth. ‘Student Q’ said that videos were too short to explain the topic, whereas ‘student O’ noted that though videos were fine, he/she still preferred teachers’ guidance for understanding the topic properly. These criticisms echo the findings of Maria & Anna (2022), where they argued that though microlearning is effective for introducing a simple topic, it needs to be paired with deeper instruction for complex topics. According to Akhter (2024), Rahmat et al. (2017), writing, being a complex skill, faces issues like; organization difficulty, grammatical issues, issues of developing ideas etc. Therefore, micro-learning may not always be a good option, as it tends to focus only on the surface level of a topic rather than exploring it in depth. Moreover, Yundayani & Alghadari (2024) argued that understanding of students' characteristics is different which sometimes hinders the effectiveness of micro-teaching.

From this thematic discussion, it can be concluded that combining microlearning with traditional one can be more effective. Though few students did not give it a good rating, most of the students found the method fruitful. Although the majority positive response is giving a positive attitude towards micro-learning, in a classroom every student is important. So, proper lesson planning with effective materials may mitigate the issues of few students. According to Yundayani & Alghadari (2024), in micro-learning, proper engaging lesson planning (like; using games, songs, project-based learning), according to the learners demands, may create a beneficial environment for every student in an educational setting. In short, it can be said that a blended approach,

combining micro-learning and traditional lectures can create engaging learning and bring out proper outcomes.

5.3 Observations from control and experimental group sessions

During the classes and activities, while the experimental group showed a detectable improvement, the control group faced several challenges, which predominantly hinder their progress. The most important issue was that most of the students in classes frequently remained absent, and in the next class, many of them struggled to understand the lesson quickly. This affected their engagement with the lessons and completion of required activities. From the observation, it was figured out that those absences contributed to the lower performance observed in the control group, as students missed out on valuable learning opportunities, resulting in a poor performance rate in completing the given assignments. Unfortunately, many of them left the class tasks unfinished and did not complete them at their home either. On the other hand, in the experimental class almost every student showed their interest in lessons and tried to attend everyday classes. This may have happened due to a new approach to teaching, and those videos attracted them. In class, during the activities and while showing videos, most of the students became excited. Since they were interested in learning, they always tried to finish the activities with their full attention.

Additionally, another noticeable difficulty arose during the session in the control group, which was taking extra time. Unlike the experimental group, students took more time to finish the sessions. The materials were designed to finish in four classes, although the control group took

five classes to end the session. In the control group, I did not use any additional materials to support them to enhance their writing performance. I conducted their session in the traditional style and only gave lectures to help them understand the topics. This traditional practice may have seemed monotonous to them, and somehow, they have become distracted from the lessons so far.

Moreover, most students found that topic sentences and brainstorming were the hardest part and took longer time to understand. For instance, I spend a whole class just to help them understand what ‘topic sentence’ actually refers to. However, the scenario in the experimental group was different. Many students were enthusiastic and completed their sessions in four classes. The dominant difference I noticed there; it was quite tough to teach the control group the same topic compared to the experimental group. The prime reason was students from the experimental group, revised their learning lessons daily. They were asked before coming to class to watch the videos to have an idea about the topic. After coming to class, I showed them the video again, and somehow, they managed to understand most of the parts of the topic from the video. Then when I gave lectures, they fully understood the topic, and I did not need to give any lecture twice, as they had easily understood the topic beforehand due to their prior knowledge. Therefore, it can be said that, through micro-learning, teachers can help students understand the topic within desired time. As a result, teachers will find extra time before the exams to revise the topics again. Furthermore, students also will feel less stress, if they finish their lesson properly before conducting any exams.

Additionally, control group students became bored most of the time due to their limited attention span. Class time was about 50 minutes. As I have mentioned earlier, I only gave lectures to help them understand the topics, so many students became distracted and did not pay proper

attention to the lectures and tasks either, as their limited attention span made it difficult for them to stay focused all the time. As a result, most of the time I had to repeat the same lectures. Thus, their learning process was disrupted and affected their overall writing performance. On the other hand, in the experimental group I used different types of videos as authentic materials along with lectures to improve their learning. The videos were around 3 to 5 minutes long, which were small in size. These videos perfectly grabbed their attention. After that, I gave small lectures to properly help them understand the topics. This new combination was well-received by them, as it matched with their learning preferences.

However, interestingly, a good experience happened in the experimental group. Most students started reading newspapers to understand the real use of different types of sentence structures and enhance their vocabulary levels. That was quite surprising for me, as I did not expect it at all. At first class, I encouraged them to try to avoid memorizing as much as possible and practice writing on their own. I suggested that they should read some English newspapers, where they will find the use of different types of sentence structures and a lot of vocabulary. They took it seriously and started to read.

In the experimental group, I faced the problem of not having a proper projector. So, I used my laptop as a source of showing videos. My students were 20 because, at that time, the government did not provide all the books, and not all the classes did not start properly, so not all the students attended. Before starting the class, I went to the classroom and showed videos through my laptop. Some students who sat at the back said they did not hear properly. So, I followed the flipped classroom technique and created a Facebook group, uploaded all the class materials in the

group. Before entering the class, they watched the videos, and when I played the videos again, students who sat at the back said they understood the videos, although the sound quality sometimes disturbed them as they had already watched it beforehand.

5.4 Limitation of the study

Although the findings of the study demonstrate the potential of micro-learning modules in enhancing students' writing skills, certain limitations must be acknowledged. The short duration of the intervention—spanning only four days in the experimental group and five days in the control group—limits the understanding of long-term retention and sustained skill development. Moreover, the content focus was restricted to single writing genre (argumentative essays), which may not reflect the effectiveness of micro-learning for other writing types such as descriptive, narrative writing. Likewise, the study targeted only one grade level (Class 10), which restricts the generalizability of the results across different age groups and academic stages.

A key logistical limitation involved the technology used. Due to a faulty projector, a personal laptop was used to display the video materials. It will not be possible for all teachers to use laptops, tabs or mobile phones as a resource of micro-learning for displaying video materials. Additionally, all students accessed the micro-learning videos through a Facebook group, assuming they had access to mobile data and parental approval. This setup may not be easily replicable in other rural schools where resources or permission are not readily available. Teachers in less technologically equipped schools may also face challenges in preparing or delivering multimedia content.

Teacher readiness is equally pivotal. Delivering micro-learning effectively demands facility with basic video editing, screen-casting, and online moderation (e.g., managing a closed Facebook or Google Classroom group). If teachers lack these qualities and proper training is not given, the effectiveness will hamper. Moreover, large class sizes common in many Bangladeshi schools (often 50-60 pupils) may reduce opportunities for the close monitoring and feedback that make micro-tasks potent.

Generalizability is further limited by the infrastructural and contextual realities of rural Bangladeshi schools. Many institutions still operate with minimal access to internet connectivity, consistent electricity, or up-to-date devices— factors that are essential for implementing micro-learning effectively. Furthermore, while the Gen-Z learners in this study responded well to visual and digital input, their engagement might have been influenced by the novelty of the approach. In settings, where digital tools are already normalized, the same level of enthusiasm and performance gains may not be observed.

5.5 Implications

Several actionable steps can be taken to improve the integration of micro-learning in secondary education in Bangladesh. Syllabus developers may consider incorporating micro-learning strategies directly into the national curriculum, especially for writing-focused subjects. Lessons can be restructured into smaller, goal-oriented sub units such as writing thesis statements, using transitional phrases or developing topic sentences. Embedding references to digital content— such as QR codes linking to short instructional videos— within textbooks can make learning more accessible, particularly for Gen-Z learners who are naturally drawn to visual and audio content.

These videos should be designed with simple language and aligned with students' cognitive abilities to ensure inclusivity across both rural and urban contexts. Syllabus designers should not only focus on only micro-learning resources, rather they should promote blended learning approaches that balance traditional lectures with video-supported instruction.

In parallel, teacher training programmes must be updated to include practical modules on the creation and application of micro-learning content. Training sessions should provide teachers hands-on experience in digital skills such as; video recording, screen casting and lesson planning for ensuring they can produce short, targeted lessons that are engaging to learners. This would improve students' preparedness and allow class time to be more productive. Given that many schools, especially in rural areas, may lack internet or adequate devices, the implementation must also cover low tech alternatives. Solutions such as; USB distributed video files, using school projectors, or even printed screenshots from video lessons should be adopted. Teacher training must also prepare educators to identify and respond to the varying needs of students, especially those who may struggle with the pace or unfamiliarity of micro-learning content.

In addition to curriculum and training improvements, further research should be implemented to refine the micro-learning approach in education. Further studies assessing the long-term impact of micro-learning on writing skills retention would be valuable. Comparative studies across multiple schools, including urban and English-medium institutions should be carried out for broader insights into the generalizability of micro-learning across diverse educational settings. Researchers should also investigate the effectiveness of micro-learning in teaching other aspects of language learning such as; speaking, reading and listening. Moreover, studies focusing

on teacher experiences and challenges in implementing micro-learning would provide valuable feedback for policy makers and training institutes. Exploring students' digital literacy levels and their readiness to adopt technology-based learning can further inform inclusive teaching strategies. These areas of future research would help refine the micro-learning model, ensuring its adaptability and effectiveness for all learners in the Bangladeshi context.

Chapter 6

Conclusion

This study aimed to evaluate the effectiveness of micro-learning modules in enhancing the writing skills of Gen-Z learners in Bangladeshi high schools, focusing particularly on overcoming the challenges posed by their limited attention spans and engagement typical of this generation. This research found that the experimental group, exposed to micro-learning, showed a significant improvement over the control group in crucial writing aspects such as content, grammar, organization, vocabulary and mechanics. Moreover, many students in the experimental group indicated a strong liking for the micro-learning approach, noting its positive impact on engagement, understanding, and reducing writing-related anxiety. These results suggest that micro-learning, with its emphasis on short, digestible video content combined with traditional lectures, is highly effective in enhancing writing proficiency among Bangladeshi high school students. These findings point to a need for student-centered, technology-enhanced pedagogy in Bangladesh and highlight how micro-learning can modernize curriculum by making learning more interactive and accessible.

While the study provides compelling evidence for the effectiveness of micro-learning, it is important to acknowledge its limitations. The sample size was small, sessions limited to five days based on a single topic, and study was conducted at only one school due to time limitation, which may limit the generalizability of the results. Additionally, individual learning preferences were not fully accounted for, as some students preferred more in-depth explanation in the video format. The availability of technical resources was also not considered, which may influence the practicality of implementing micro-learning in all the schools.

Looking ahead, future research could explore more targeted directions to expand the scope of this study. For example, integrating micro-learning with TBLT could offer a richer pedagogical framework, blending structured writing instruction with real-world tasks. Similarly, investigating the impact of micro-learning on other language skills such as listening and reading comprehension would provide a more comprehensive view of its educational value. Cross-regional studies comparing urban and rural school settings, or public versus private institutions, would also be valuable in assessing the border applicability and equity of this teaching model.

The study's implications reflect deeper educational values that are especially relevant in today's context. It promotes inclusivity by allowing learners to progress at their own pace, fosters learner agency through self-directed study of on-demand videos, and cultivates multimodal literacies by blending text, audio and visuals – skills essential for the 21-st century knowledge economy. This study also offers valuable insights for teachers, curriculum designers and policy makers in Bangladesh. For teachers, it provides an effective method to enhance students' engagement, reduce classroom pressure, and support diverse learning needs throughout flexible, bite-sized lessons. Curriculum designers can use the findings to restructure writing lessons into micro-units with digital content. Policymakers can promote ICT integration, equity and update teacher training to align with Digital Bangladesh goals. In conclusion, from the findings of the study, it can be concluded that micro-learning with the combination of lecture-based approach is a valuable method for improving writing skills in EFL classrooms.

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Appendix

Interview Question

1. Age:

- 14
- 15
- 16

2. Have you ever used short videos (e.g., Youtube shorts, tiktok) to learn English writing in the classroom before this study?

- Yes
- No

3. The combination of short videos and lectures is more effective than just lectures alone in improving my writing skill.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

4. Compared to traditional method, micro-learning assists me retain key writing concepts more effectively

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

5. I was able to recall and apply writing strategies better after watching short videos along with lectures

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

6. The 5-minute videos were clear and easy to follow

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

7. Watching short videos before the lecture helped me feel more prepared for the whole class

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

8. I would like more lessons to be taught using microlearning videos in addition to lectures.

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

9. The videos matched my learning style and helped me stay focused without feeling overwhelmed

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

10. The microlearning session made me feel less anxious about writing

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

11. What difference did you notice in your learning when using this microlearning session compared to traditional lectures?

12. What aspect of the micro-learning videos did you find most helpful for your writing as a student?