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Abstract

This study is based on the possible impact the use of SMS language and abbreviations by students may have on their academic writing. Students from secondary schools in Norway between the ages of 13 and 16 were examined. The research focuses on textese and investigates the possible effects textese may have on formal English writing. Specifically, the study sought to establish the effect of SMS language use on the spelling and punctuation habits of the students. It also tried to find out the most common variants of textese that may occur in their writing assignment, and to discover whether the students are able to differentiate between formal and informal contexts of writing.

The study used a mixed method approach consisting of quantitative and qualitative data from two primary sources: a questionnaire and a writing assignment. Data from the students was collected online by their teacher, who then forwarded them to the researcher.

In terms of materials, the questionnaire results were mainly used to find out the students' age, and phone usage in regard to their chatting habits (how frequent they chat and whether they use textese while chatting). The essay results were to find out whether there would be features of textisms in them. These features provided the parameters which laid basis to find correlation between textese use and academic writing.

Analyses conducted showed that there was impact of textese use on the punctuation and spelling habits of the students. Those who responded to using textese more to moderately, had more errors in their essays. This could, however, be attributed to the perception of the writing assignment. Giving the students specific instructions during classroom assignments could help ameliorate the situation, as it is the prerogative of educators to ensure that students are made aware of contexts.

The study recommends further research on a larger sample size, as the size used for this study is not sufficient enough to draw conclusions.

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List of Abbreviations

SMS: Short Message Service

IM: Instant Message

CMC: Computer-Mediated Communication

SPSS: Statistical Package for Social Sciences

ICT: Information and Communication Technology

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1.1 Introduction

This is an investigative study on the impact of SMS language and abbreviations on the academic writing of secondary school students in Norway. With the introduction of the Short Message Service (SMS) and internet chatting software, otherwise referred to as text messaging, texting, or Internet chatting, communication is relatively cheap. It is personal, offering more privacy between participants, and is unobtrusive (Ling, 2005, p. 335). However, because there is a limit of 160 characters per SMS, users have created space-saving strategies in other to make sending a message quicker and cost-effective, as exceeding this limit would involve paying extra (Thurlow, 2003, p. 5). Some of these space-saving strategies include significant use of abbreviations and the omission of unnecessary punctuations. The use of language this way has called for concern among educators and researchers. This study aims to investigate the impact of frequent use of SMS language and abbreviation on the academic writing of students. This chapter will consist of the general background to the study, statement of the problem, the objective of the study, overview of study, and the significance of the study.

1.2 Background Information

Over the last few decades, there has been a rapid progression of technology. These technological advancements have brought about the innovation of gadgets and these gadgets are also commercialised and used amongst the younger generation, where the sending and receiving of information instantly has become a norm. Through observation, one can see while walking on the streets, family dinners, classroom activities, and even friendly gatherings, that the use of mobile phones is surpassing the computer age. Smartphones, iphones, and tablets are constantly used for texting and the text messaging service is considered one of the best features of the mobile phone. According to Thurlow (2003), there were almost one billion cell phone users worldwide in 2003 as compared to the estimated 600 million people who used the internet

at the time, and an estimate of 1.7 billion SMS messages was exchanged in Britain alone, adding up to about 13 billion messages per year.

Norway is not exonerated from the trend of text messaging. According to Ling, "statistics show that on average there are more than 280,000 SMS messages sent every hour in Norway, that is more than 6.7 million per day and this is in a country with only 4 million inhabitants (Sandvin, Dagfinrud and Sæther 2002)", (2005, p. 338). He posits that women and teens are the most enthusiastic users of SMS. However, when considering the frequency of use, more than 85% of teens report sending SMS messages daily (p. 339). Having embraced the world of classroom digitalisation, most schoolwork in Norway is done with laptops and pads and is submitted online. Thus, students are surrounded by gadgets in and out of the classroom. Although paper-based learning resources are still widely used by teachers in Norwegian secondary schools, ed-tech companies are increasingly developing internet-based learning materials and applications (Country Report on Information and Communication Technology (ICT) in Education 2018, p. 14). For the upper secondary school level, 18 of the 19 county authorities (all except Oslo) have come together to establish a digital learning resource portal, according to the National Digital Learning Arena (NDLA). This means that the students are constantly in a "digital world" in and out of the classroom with all the assistance that come with technology.

It can be agreed that secondary school students fall under the category of people commonly referred to as the 'Millennials' who are born into the fast-paced world of computers, the Internet, e-mails, and cell phones (Vali, 2005, p. 30), and they use technological assistance both in and out of school. According to Thurlow et al, "we are in a sense shaped by technology but also shape it ourselves" (2004, p. 43), and one of the possible influences of technological assistance is its influence on written language. When communicating with friends, they contract

words which saves time and resources. Thurlow (2003, p. 5) records that the limit of 160 characters per SMS has motivated users to invent space-saving strategies to make sending SMS quicker and more cost-effective, as exceeding this limit involves paying extra. These space-saving strategies include significant use of abbreviations, numbers, and punctuations. These contractions are not peculiar to formal writing in classrooms and students could be penalised when they use them. When words such as 'please' is abbreviated to *'pls'*, 'your' for *'ur*', 'text' for *'txt*', 'tomorrow' to *'2moro'* etc. by students in classroom situations that require standard English, they are "often sanctioned in glaring ways, notably through reduction of marks" (Odey et al., 2014, p. 90). Also, a reader who is not conversant with textese may find it difficult to comprehend the message the writer is trying to convey. Hence, the necessity to use language properly for effective communication of ideas during formal writing situations cannot be overemphasised. Thus, keen interest is aroused to find out whether the students can differentiate between when to use informal language (SMS language and abbreviations) and formal language (Standard English).

1.3 Linguistic Features of SMS Language

According to Drouin (2011, p. 67), SMS language often referred to as textese, is an abbreviated vocabulary that includes initialisms, letter/number homophones, contractions or shortenings, emoticons, and the deletion of unnecessary words, vowels, punctuation, and capitalisation.

Initialisms and acronyms are a type of abbreviation where the first letters in words used in a phrase or sentence are used in place of the words. Merriam-Webster dictionary states that initialism can either be an abbreviation or an acronym depending on whether you choose to spell the word out or pronounce it like words typically are pronounced (www.merriam-

webster.com/dictionary/abbreviation). Examples of initialism include *'lol'* for 'laughing out loud', '*asap*' for 'as soon as possible', and '*btw'* for 'by the way'.

In textese, words are often written the way they are pronounced, and this sometimes requires the use of numeric graphemes. For example, '*2b*' is used in place of 'to be', '*gr8 db8'* is used in place of 'great debate', and '*l8r'* for 'later'. Because this feature is somewhat phonetical, that is these slangs are written the way they are pronounced, Drouin argues that it is similar to standard English, and therefore even those who do not know the 'textese' vocabulary may be able to decipher its meaning (2011, p. 67).

Contractions happen when some letters in a word are deleted. These deletions can be presented in forms such as deletion of vowels; '*msg'* for 'message', '*thnx'* or '*tnx'* for 'thanks'; and clippings, for example, '*goin'* for 'going' '*feb'* for 'February' '*xam'* for 'exam'. According to Sharifi, vowels are more likely to be deleted twice as much as consonants (2015, p. 222). She also posits that "/g/ is not treated as part of a digraph that forms the /ŋ/ sound, but as a separate consonant since one of the digraph elements is more likely to carry the phonological information about the sound it denotes. Hence, the /n/ sound happens to be superior in conveying the nasal gesture" (p. 222). Though some contracted words are not penalised when used in an informal context, they are sometimes frowned at when used in formal contexts, such as writing a thesis or an employment letter. For example, '*it's*' instead of 'it is'; '*doesn't* instead of 'does not', etc.

Since what matters most in text messaging is the need for efficiency, that is conveying the message as fast, effectively, and succinctly as possible, users give little or no attention to punctuations and capitalisations. For example, the letter 'I' is most times used in the lower case

(unless changed to upper case by autocorrect), names of cities and even people are written in lower case, full stop (.) and comma (,) is often neglected, and the apostrophe most times is never used. Few instances include, '*cant'* for 'can't', '*i'* for 'I', 'norway' for 'Norway', etc., and "*I wont do it again*" can be written without a period (.). They, however, sometimes do the opposite of this, by writing everything in capitals and using excess punctuations to show emphasis. For example, '*NEVER'* for 'never', '*what??!!!*' for 'what?' (Verheijen 2013, p. 584).

Other textese features include the use of emoticons in which smileys are used to convey a feeling or emotion instead of words. For example, instead of writing 'smiling', one may decide to use an emoji '☺' to convey this, or '☹' for 'sad'. Typographic symbols are special purpose and punctuation characters that comprise a complete type font. For example, '@' in place of 'at', © for 'copyright', '&' for 'and', etc. Repetition of letters as in '*greeeeaaattt'* and *'noooooo'* is also used for emphasis. Accent stylisations occur when one pronounces or writes a word to conform to a particular style. For example, '*anuva'* for 'another', *'wanna'* for 'want to' (p. 584).

Autocorrect is a software feature that automatically replaces a word in word-processed documents, text messages, spreadsheets, or search boxes and it automatically suggests an alternative word. It has an automatic data validation function and is commonly found in word processors and text editing interfaces for mobile phones, tablets, computers, and laptops. Its principal purpose is spell checking; to correct common typing errors and spelling mistakes in documents. Thus, it saves time for the user. It is also used to automatically format text and insert special characters. The replacement list for text replacement can be modified by the user, allowing the user to use shortcuts and abbreviations they have coded in on their devices (Ling 2005, p. 4). The main purpose of this software is not to shorten words, but to speed up writing.

As Ling puts it “the programme does not add automatic abbreviations unless you code them in. One actually has to tap in all the letters of a word in order to enter it. More than anything else it adds to the speed of the writing, not necessarily the length of the messages” (2005, p. 4). However, this is not entirely true, as one can type in the first few letters of a word and it will give a suggestion. One can tap on that suggestion and the whole word is inserted.

1.4 Problem Statement

There has been an ongoing debate on whether the use of textese (especially by teens) has any effect on their academic writing skills. Though little research has been carried out on Norwegian secondary school students to see if there are any negative impacts of textese on their academic writing, one thing that is not oblivious is the fact that these students constantly use textese and autocorrect (T9) while chatting with their friends (Ling 2005, p. 4-6). This thesis, therefore, tries to answer the following research question: Does SMS language and abbreviation affect the academic writing of secondary school students? If it does, to what extent does it happen?

To unpack this question, the following sub-questions will be considered:

• Is there any impact of SMS language and abbreviation on the spelling and punctuation habits of secondary school students while writing academic work?

• What forms or variants of SMS language and abbreviations are most commonly seen in the academic writing of these students?

• Are students able to differentiate between formal and informal contexts in their writing?

1.5 Aim of the Study

The general aim of this thesis is to understand if there is a rub-off of the SMS language on the formal writing of these students, or if they can differentiate between the settings and contexts of each writing and avoid the use of informal language when writing a formal work. If there is any impact, this study would reveal which aspects of writing are most affected, so as to suggest possible ways to ameliorate the situation. Some possible features of SMS language include the use of numerals such as "4ever/4eva", the use of abbreviations or acronyms such as "FYI, LOL", etc (see section 1.3 above). Adding to the possible impact of SMS language and abbreviations, this thesis will investigate the features of SMS language most commonly used by the students, if any.

1.6 Overview of the thesis

This study is going to investigate the aforementioned topic in greater detail in the subsequent chapters. Chapter two reviews past literary works of those that have researched the subject matter, and also discusses the theoretical framework on which this study is based. Chapter three gives an elaborate explanation of the methodology and procedures employed while carrying out this research. This includes the use of two primary data sources (the questionnaire and essay), collection and analysis of data, ethical considerations, and questions of validity and reliability. Chapter four focuses on the questionnaire results, which cover the students' age, phone usage, SMS language and abbreviation usage and frequency. It also focuses on the essay results, which look into the features of SMS language and abbreviations as seen from the writings of the students. It then draws a correlation between the use of SMS language and abbreviation and academic writing using the Statistical Package for Social Sciences (SPSS) software. Chapter

five consists of the discussion of the findings in relation to the research questions, followed by the implications and limitations of the study, and finally, chapter six which presents the conclusion of the thesis.

1.7 Significance of the study

With the digitalisation of classrooms in Norway, and the high ownership of laptops and mobile phones by students in high school, the influence of these gadgets on the academic writing of these students is explored. Students use their phones for several purposes, which include chatting with their friends and sending messages. With the help of word processing programs, the use of truncated forms, and numerals to shorten messages, otherwise known as Textese, there has been a worrisome argument that their academic writing would be impacted negatively. This thesis will, thus, help to answer this question by contributing to the research field where there is already a hot debate going on regarding the impact of Textese on academic work.

2 Theoretical background

2.1 Introduction

This chapter focuses on the theoretical background this research is hinged on. It also examines past research works carried out on the influence of textese on writing. Section 2.2 covers the definition of terms for a better understanding of the researcher's line of thought. Section 2.2.1 explains the term 'SMS language', and the different terminologies used to refer to it. Section 2.2.2 briefly addresses the term 'abbreviation' while explaining how it intertwines with SMS language. Section 2.2.3 presents an overview of Standard English. This is followed by section 2.3, which introduces the conclusive studies carried out by other researchers on the influence of textese on standard English, and it is stratified into three categories: positive, negative, and insignificant or mixed relationship. Section 2.3.1 elaborates on research studies that prove that the use of textese improves writing rather than mar it. Section 2.3.2 deals with the negative relationship between textese and formal writing, and section 2.3.3 presents the mixed or insignificant relationship between textese and academic literacy. Section 2.4 introduces the theories on which this work is based on. Section 2.4.1 elaborates on Everett Rogers' Diffusion of Innovation, and section 2.4.2 expatiates on Perkins David and Salomon Gavriel's Low-Road/High-Road theory of transfer of learning. This is followed by the summary which is presented in section 2.5.

2.2 Definition of terms

There has been tremendous increase in the use of Short message service (SMS), otherwise known as text messaging and Instant messaging (IM). Texting, also called chatting, has increasingly been used among teenagers and young adults following the increase in ownership of mobile phones and personal computers (Ling, 2005). Both SMS and IM are forms of computer-mediated communication (CMC), but they are in some ways different. While SMSes

are generally limited to 160 characters, IMs generally have no limit. According to Baron, "most text messages are composed all of a piece and sent as single transmissions", while with IM, "messages from a single interlocutor are commonly chunked into seriatim transmission, yielding a sequence of IMs together constituting an utterance" (2005). Also, while SMS is asynchronous, IMs are synchronous (Verheijen, 2013, 583). This means that, while SMS does not require the immediate attention of the receiver of the message, IM on the other hand is the exchange of messages taking place in real-time between two or more people logged into a particular instant messaging service.

There are also similarities between SMS and IM. To begin with, both are forms of CMC. Again, both forms of communication use a language which has many features in common which include truncated words, autocorrect and abbreviations. (see chapter 1, section 1.3). This form of language has been referred to by a variety of terms including 'Netspeak', 'SMS language', 'SMS speak', 'textspeak', and 'textism' or 'textese', (Verheijen, 2013, p. 583). For this study, the researcher will alternate between using SMS language and textism or textese to refer to this form of language.

2.2.1 SMS language

According to Shazia et al, "SMS language is a term for the abbreviations and rebus-like slang most commonly used due to the essential pithiness of mobile phone text messaging etiquette" (2013, p. 12884). Many telecommunications companies have an SMS character limit of about 160 that is to be used to send a single message. Being able to convey an intelligible message using the least number of characters, is the objective of SMS language. Due to this fact, texters prefer to use abbreviated forms through the deletion of vowels and consonants (tlk for talk; comin for coming), alphanumeric homophony (4get for forget), acronyms (brb for be right

back) and omission of punctuations (cant for can't), thus saving time, effort and cost. Also, because "all communication is context bound and texting involves turn-taking, texters know each other's texting abbreviations and mannerisms well" (p.12884). SMS language features, such as not capitalizing (i for I), adding extra punctuations (huh??? for huh?), lack of inter-word spacing (justsaying), emoticons (☺ for smiling), accent stylization (anuva for another) and typographic symbols (@ for at) are incorporated to enable speedy reading and response from partakers.

2.2.2 Abbreviations

According to Merriam-Webster's dictionary, abbreviation is a shortened form of a written word or phrase used to save space and time, to avoid repetition of long words and phrases, or simply to conform to conventional usage (www.merriam-webster.com/dictionary/abbreviation). Some forms of abbreviations include initialisms and acronyms (see chapter 1, section 1.3). Acronym is a shortened form of a phrase and is usually made up of the initial letters of that phrase (www.merriam-webster.com/dictionary/abbreviation). While abbreviations and acronyms may seem similar, they are different in the sense that abbreviations can be shortened without needing the initial letters of the word or phrase. For example, *'appt'* for 'appointment' and '*nite'* for 'night' are regarded as abbreviations, while '*asap' for* 'as soon as possible' and '*brb'* for 'be right back' are acronyms. Thus, acronym is a form of abbreviation.

Some abbreviations are used in standard English conventions, such as vocabularies peculiar to a particular field. For example, DVT is a medical acronym that means Deep Vein Thrombosis. However, Plester et al. point out that some abbreviations are considered as textisms, and they are phonologically based. For example, '*wot'* for 'what' and '*C U L8R'* for 'see you later (2008, p. 138). These are the linguistic features considered as textisms in this study.

2.2.3 Overview on Standard English

This ingenuity has prompted linguists to explore the possible impacts SMS language and abbreviations have on standard English. However, to understand this better, an understanding of what is meant by Standard English and writing, is important. Davies (1999, p. 171) explains that Standard English is "the English we take for granted, English which is not strange or unusual or different in any way, what is sometimes referred to as the unmarked variety and is seen as being the English taught in schools and that is used nationally and is 'reputable and current'". He further states that Standard English is "the English that with respect to spelling, grammar, pronunciation and vocabulary is substantially uniform though not devoid of regional differences, that is well established by usage in the formal and informal speech and writing of the educated, and that is widely recognised as acceptable wherever English is spoken and understood" (1999, p. 172). Thus, Standard English is agreed to be the language English educators use in their classrooms.

Furthermore, writing according to Bello (1997, p.1), is "a continuing process of discovering how to find the most effective language for communicating one's thoughts and feelings", and the SMS communication has effectively brought about an entirely new platform for communicating one's thoughts, while managing resources. Wood, et al (2011) state that abbreviated text messages are messages that are crafted by texters who select common definitions and symbols to communicate ideas in a brief and succinct way and that this form of computer-mediated communication (CMC) is often used in e-mails and instant messages. Because of the nature of telephony and the on-screen limitation of 160 characters per text, texters have innovated a set of conventions and coded abbreviations to convey their messages aptly. The use of these conventions has according to Odey et al., however, triggered the fear of

English language educators, that Standard English is jeopardized and that the essential mechanics of writing, such as grammar, syntax, punctuation and capitalization are thrown to the wind (2014, p. 92).

This profound change in communication worldwide through chatting and texting, has however, aroused conflicting views on the impact of the language of the Internet on academic writing. When textisms are used in informal contexts, such as while chatting with friends, it can be overlooked. But when they are used in a formal context, such as during an English examination where total formal writing is required, they may be penalised through the deduction of marks. Odey et al. opines that "in most examination situations, candidates are clearly reminded of the necessity nay obligation to use Standard English to render their communication more intelligible to examiners and in return earn maximal marks for their efforts (2014, p. 85). Students are, thus, expected to be careful when writing academic works, especially if there would be a penalty for using textese. As Awoyemi posits, "Standard English cannot remain undefiled as it daily comes in contact with different people and cultures. Thus, with the recent appearance of multiple genres of language through the internet and other forms of technologically mediated communication – such – text messaging, English is bound to be defiled" (2013, p. 36). While some think that this change in communication format is detrimental to language, others argue that textism actually enriches the language.

2.3 Literature review

There are countless studies regarding the impact of textese on the academic writing of students, as there is constant research going on concerning the phenomenon, and this study aims to contribute to the discussion.

2.3.1 Three Opposing Views

Previous studies conducted by scholars on the possible impact of textism on the academic writing of students have shown three opposing views: those with results showing that textism has a negative effect on the academic literacy of students; those that show that not only are students adept when it comes to differentiating between writing contexts, the use of textese has in fact had a positive impact on their reading and writing skills; and those with a mixed review, where while SMS language use is positively influencing a language skill, it is on the other hand damaging some other language skills. Twelve studies will be reviewed in all: four for each category. They were found on the Internet through the use of keywords and were categorised according to their findings. Some of the studies were found on the internet and others were gotten from the library. The main focus of the studies was on the influence of textese on the literacy of adolescents, with majority of them centred on spelling and punctuations.

2.3.2 Positive Relationship

One of such researchers is Crystal (2009, p.7), who argues that "psychologists, sociolinguists, health specialists, journalists, and educators have had plenty to say; but hardly any reports provide details of what exactly happens to language when people create texts. As a result, a huge popular mythology has grown up, in which exaggerated and distorted accounts of what youngsters are believed to do when they text has fuelled prophecies of impending linguistic disaster". He postulates that research findings of Textese being detrimental to formal writing are "exaggerated and distorted". He further argues that "all the popular beliefs about texting are wrong, or at least debatable. Its graphic distinctiveness is not a totally new phenomenon nor is its use restricted to the young generation. There is increasing evidence that it helps rather than hinders literacy" (2009, p. 9). He, however, admits that there could be possible impact brought about by the use of the Internet on a general note, but no one knows its impact on language.

"Nobody knows what the impact is going to be on language, except one can sense that it is making language change faster than ever before" (2010, p.14). Agreeably, language is constantly changing, and Crystal argues that "whether texting will be around long enough for a genre to develop permanently is anybody's guess. Will we still be texting in 50 years' time? Perhaps not. It may simply be a transient linguistic phenomenon due to the nature of technology. It may go out of fashion" (2010, p.14).

A study was carried out on Australian Children between the ages of 10-12 by Bushnell, Kemp and Martin from the University of Tasmania in 2011**.** In this study, matters of text-messaging practices with their relationship to traditional spelling ability was investigated. It was found that 82% of the 227 tested children reported sending text-messages in an average of 5 messages per day. The children were asked to rewrite a list of 30 conventionally spelt words as they would in a text message to a friend. The researchers found a wide range of text message abbreviations produced by the children. Prior to this test, the students were administered the Wide Range Achievement Test-4 (WRAT), which requires participants to spell 42 words of increasing difficulty to dictation. They concluded their study by positing that the use of SMS has a significantly positive impact on the general spelling ability of children.

A research carried out in 2013 by Shaziz, Shamim, Aziz and Avais on 50 undergraduate students of Computer Engineering and Telecommunication Engineering at the University of Lahore in Pakistan, all within the ages of 19 – 25, found that "people's concerns about the impact of SMS language on the academic writing of students and about standard language being in danger of destruction are exaggerated or misplaced" (p.12890). These students had the same English proficiency level, having studied English for 10-12 years before gaining admission into these Engineering programs with the exception of 8 students who had studied English for 6-10

years. They were given an essay to write with a word limit of 150-200 words within an hour. They pointed out that the number of spelling errors were almost negligible, as only 0.04 misspelling errors were found out of the 7092 words written by all the students. Also, only 3.64% of punctuations were missing; out of the 440 obligatory full stops, only 16 were missing. They conclude by stating that "the present study has de-mystified the popular belief or misconception that the students' writing is adversely affected by the features specific to texting and thus, the future of standard English is in danger" (p.12889). They agree that students are aware of the context in which they are writing and can appropriately switch styles between formal and informal wring. This is, however, applicable to undergraduate students, and their assessment was restricted to spelling and punctuations. Other SMS language forms such as accent stylization, emoticons, etc. was not analysed.

Plester carried out two studies investigating the impact of textism on literacy. The first was done with Wood and Bell in 2008 and involved 65 participants within the ages of 11 and 12 who were recruited from a school in the Midlands of England. A Cognitive Abilities Test (CAT) was first conducted in order to ascertain the students' general literacy ability, after which they were asked to translate a sentence into text language from standard English (I can't wait to see you later tonight, is anyone else going to be there?), and one message from text language into standard English (Hav u cn dose ppl ova dere? I fink 1 of dems my m8s gf) (p.139). Their results showed that those with the highest ratio of textisms to word (when translating from standard English to textisms) and fewer errors while translating from textisms to standard English, had higher verbal reasoning scores.

In their second research, Plester et al focused more specifically on the association between textism use and children's performance on spelling and writing tasks. They studied 35 year 6

children between the ages of 10 and 11, gotten from two schools. In addition to answering questions on their use of mobile phones, the children were asked to complete the Spelling sub-test of the British Ability Scales II. They also collated information containing the children's writing assessment ability, after which a similar kind of test as in the previous study was given, but this time using lengthier translation passages. They found out that the ratio of phonological textisms (2nite for tonight, for example) was positively related to spelling; the more the children's spelling core increased, so did the number of interpretation errors made decrease. Also, children who were at the highest level on a standardized reading test used the most textisms in the translation exercise. Hence, Plester et al. posit that there is no negative impact of textisms on children's literacy attainment. They conclude by stating that "from this second study there is no evidence that knowledge of textisms by pre-teen children has any negative association with their written language competence" and that all associations between text language measures and school-related literacy measures have either been positive or insignificant" (2008, p.142).

Studying the effect of textism on spelling performance, Powell and Dixon samples 94 British university students. This research investigated the effects of exposure to textisms, misspellings and correctly spelled words on adults' spelling performance. They were given a pretest, exposed to the test items as either correctly spelled word (tonight), incorrectly spelled word (tonite), or textisms (2nite), and then given a spelling post-test containing the exact items as the pre-test. Their result showed that scores reduced from pre-test to post-test following exposure to misspellings, but the students' performance improved following exposure to correctly spelled words and textisms. Thus, Powell and Dixon conclude that exposure to textisms and correctly spelled words, had a positive impact on adults' spelling, unlike misspellings.

2.3.3 Negative Relationship

Though many scholars such as Crystal, Plester, Wood, Shaziz, etc have argued that SMS language and abbreviations (textisms) have positive impact on literacy generally, other scholars are of the school of thought that it is as a matter of fact ruining Standard English and has a negative impact on students' writing skills. One of such research was conducted in 2011 by Geertsema, Hyman and Denventer, who investigated teacher's perspective on the impact of texting on adolescents' writings. They used questionnaires to determine the perception of twenty-two South African secondary school teachers of English. The study revealed that majority of the educators believed that textese negatively influenced students' writing skills. They noted that they regularly encountered non-conventional spellings based on textese; students did not always adhere to Standard English forms in respect to sentence length, punctuations and spellings; they used full stops, commas and exclamation marks inappropriately; and sentences were simplified and shortened intermittently. Geertsema et al. conclude by positing that the use of textese is perceived to negatively affect students' academic achievement and on their knowledge of Standard English.

According to Mphahlele and Mashamaite (2005), SMS is very popular among the younger generation because it saves money and time. A research conducted on tertiary students showed that the students used inappropriate writing modes in their scripts which contained truncations and numerals. Also, since words used during chats are spelled the way they are spoken, learners tend to use these informal modes formally, thereby making different errors from ungrammatical sentences to incorrect spelling mistakes. The overuse and omission of punctuations was also very common in their test and assignments. Thus, hampering the comprehension of the message they are trying to convey. This shows that many students are unable to differentiate the context and situation of the use of SMS language.

This is buttressed in the findings of Odey, Ndobo, and Floribert, who carried out a study on 50 third year students in a College of Education in Nigeria in 2014. 250 SMS messages generated were analysed together with examination scripts produced by the students. It was found that intensive use of SMS texting affected students' language literacy. Their scripts showed features of SMS Language that were also observed in their messages. According to Odey et al., there were five most dominant features of SMS Language observed and they include, "vowel deletion, graphones, alphanumeric homophony, punctuation errors and initialization among others" (p. 83).

Students are heavily sanctioned through the reduction of marks for using these ungrammatical forms of language and the more they acquire and use mobile phones, the more they risk having their writing skills deteriorate. Dansieh succinctly puts it thus, "As more and more students worldwide acquire and use mobile phones, so are they immersing themselves in text messaging. Such is the situation that some teachers, parents and students themselves are expressing concerns that students' writing skills stand the risk of being sacrificed on the altar of text messaging" (2013, p. 222). Oluga and Babalola expresses their displeasure by stating that "the text message service is a phenomenon that is affecting the spelling system of texters, making it difficult for them to get the correct orthography of words. Words like that, this, what, because and people are mistakenly written as *'dat', 'dis', 'wot'', or 'wt', 'bcs' or 'bcos'* and *'pple'* respectively. Such mistakes as far as application letters are concerned give a bad impression of the writer …. and those who are used to the very short text messages become lazy writers and may not find writing error free or undiluted continuous writing like letters, essays, or report easy again (2013, p. 340).

A study conducted in 2012 by De Jonge and Kemp on 52 Australian high school students within the ages of 13 and 15 years and fifty-three Australian university students within the ages of 18 and 24 years on the effect of text message on their literacy abilities, discovered from their results that it was "overwhelmingly negative" (p.51). These students completed experimental tests measuring morphological and orthographic awareness, spelling, reading, and non-reading tests, after which they were asked to translate sentences from standard English to textese. Results showed that the number of text messages per day, the textism density (quantity of SMS Language used) and the number of textism categories, had a significant negative correlation to the literacy scores for spelling, reading, non-word reading and morphological awareness. Only orthographic correlation was non-significant. Thus, De Jonge and Kemp argue that frequent texting may have a negative interference with the literacy development of young people or at least provide an opportunity for bad spelling to masked.

2.3.4 Insignificant or Mixed Relationship

Though there has been a mixed view on the influence of text messaging on academic writing, some results show that there are insignificant relationship between texting and academic writing. It suggests that students are aware of the context of the usage of SMS Language, and therefore, educators need not worry on youths flowing with the trend. One of such studies was that carried out by Muhammad James in 2011 on twenty 9th and 12th Grade students: six from the 9th grade and fourteen from the 12th grade. This research was carried out in a high school in Chicago, U.S. and it explored the effects of text messaging on the spelling skills of children. They were given a questionnaire to fill concerning their texting practices and later, a grade-appropriate spelling test. They were also asked if it was appropriate to use textism in formal writings, and all the students responded in the negative, that textisms are not appropriate for formal papers. The students were then asked to write a formal email to their principal, and the

results gathered showed no significant influence on spelling regardless of how frequently they texted. Muhammad concludes by stating “I am surprised that texting had no beneficial effect on spelling skills of my participants because texting mimics the practice of invented spelling” (p. 35).

In a study carried out in 2009 by Winzker, Southwood and Huddlestone on the effect of texting on the writings of English as a first language (L1) and second language (L2) user of adolescents in a South African high school, they were 88 participants. 51 had English as their L1 and thirty-seven as their L2 (their L1 was Afrikaans). The questionnaire filled by them revealed that they were avid texters and Instant Message software users on mobile phones and made use of textese frequently. Their English writings were examined for various features deviating from standard English and it turned out that mostly spelling and punctuation errors were made, but overall SMS language did not occur frequently. They researchers could infer from this that students can generally gauge when it is inappropriate to use textese and that textese has a modest negative effect on written schoolwork. Results showed that textism did not occur much in the writings of the L2 participants is it did in the writings of the L1 participants. Winzker et al. give two possible reasons why this was so: (i) Afrikaans is less suitable for certain textisms (Letter/number homophones) than English because only a few Afrikaans letter/number words have a similar phonetic sound and (ii) the possibility that L2 participants pay more attention to their spelling than L1 participants because writing in English is more difficult for them. They conclude by noting that the spelling mistakes and punctuation errors may also be attributed to factors unrelated to textese such as general spelling difficulties or interlanguage transference.

In 2009 Drouin and Davis studied 80 American college students on the effect of textese on literacy. Experimental methods were used to measure their textism use in different contexts

through the writing of formal and informal emails; textese proficiency was measured by translating standard English into textese and familiarity with textese by translating textese into standard English. Misspellings of target words commonly abbreviated in textese such as 'you're, to, two and too' were also gauged by recording spelling errors for these words in translating into Standard English. Standardized tests were used to assess their reading and spelling skills. Results showed that there were no significant differences between students who indicated that they used textese and those who did not in their literacy scores, or misspellings of words regularly abbreviated in textese. However, a survey carried out asking the students what they thought about textese revealed that about half of the students thought that textese was hindering their ability to remember Standard English. Thus, Drouin and Davis's results has a conflicting conclusion: though there were no corelation between the use of textese and literacy, many of the students' perception on textese is that it has a negative effect on Standard English.

Wood et al. in 2011 conducted what they called an intervention study with 114 British children to investigate the direction of any relationship between texting and literacy. This study was a bit different from others in the sense that none of the participants had ever owned a mobile phone, but whether the children had ever had access to Instant Messaging program was not considered. The participants were then divided randomly into an experimental group and a control group. The experimental group were given access to mobile phones after receiving a brief explanation about how to use it. They were to use it just for texting in the half-term break and on weekends for ten weeks. Prior to this, the children completed standardized pre and post-tests on reading, spelling, non-word reading, phonological awareness and retrieval, and lexical retrieval. Results showed no significant difference between the experimental and control group in regard to literacy attainment. Wood et al. posited that having access to mobile phones for texting for several weeks neither adversely nor favourably affected literacy skills. They,

however, cited that this could be due to the fact that the intervention did not last long enough for there to be an impact. On the contrary, the experimental group revealed that there were significant positive correlations between textism use and literacy development, as the use of textism could predict an increased amount of variance in spelling development.

In another study with a mixed result, Drouin sampled 152 American college students on the relationship between texting frequency and literacy in 2011. Their literacy skills were measured with standardized spelling and reading tests. Results showed that there were positive correlations between spelling and reading fluency and texting frequency, as well as significant negative correlations between reading accuracy and textese usage on social networking sites and in formal emails, but not between textese usage and informal emails. This, thus, helps us deduce that texting and textese may have separate and different relationships with literacy. Even though students who sent more text messages had higher reading and spelling abilities, students who used more textese in certain contexts (MySpace and Facebook) had lower abilities. Drouin concluded this analysis by suggesting that it is either the students using more textese in certain contexts are forgetting Standard English or they have always had lower literacy skills than those using less textese in these contexts.

It can therefore be concluded that the relationship between texting and literacy show a mixed pattern of results. These results reveal that research between texting and literacy is not a straightforward matter as many things are put into consideration. According to Verheijen, "literacy scores may correlate differently with (i) frequency of texting, (ii) use of textese/textisms and (iii) knowledge of textisms; there may be different correlations for reading (fluency/efficiency and accuracy), writing and spelling scores; and the correlations may be different for formal and informal writing" (2014, p.596). Again, there may be gender factors,

as research has shown that females use more textism than boys and they text more frequently, thus leading to a different impact on literacy. Finally, given that there are more studies reporting a positive correlation between textism and literacy than negative results, this would suggest that the popular fear or claim that SMS language has a detrimental effect on literacy skills is unfounded, at least as far as English language is concerned. Extensive research has not been carried out on other languages to know its effect on them.

2.4 Theoretical Framework

Information and Communication Technologies (ICTs) have for a long time interwoven itself with the society and many researchers have for a long time shown interest on how this occurs. Both technological industries and the academia have tried understanding the adoption of ICT both in the society and in the academic setting; how technology generally affects people's way of life. This section will examine how some theories have tried to explain why teenagers have adopted text messaging in their daily lives, and how they have been able to separate social chats from academic work.

2.4.1 Everett Rogers' Diffusion of Innovation Theory

This theory was developed by Everett Rogers in 1962 and it examines the social processes that occur when innovations or new ideas are dispersed throughout a community, organisation or institute. This theory seeks to explain how, why, and at what rate new ideas and innovations spread. He proposes that four main elements propagate this spread: the innovation itself, communication channel, time and a social system (p.11). Rogers first describes Diffusion as "a process by which an innovation is communicated through certain channels over time among members of a social system. It is a special type of communication, in that the messages are concerned with new ideas" (p.6). Innovation on the other hand is "an idea, practice, or object

that is perceived as new by an individual or other unit of adoption" (p.11). This insinuates that the perceived newness of the idea for the individual determines his or her reaction to it. In other words, if the idea seems new to the individual, it is an innovation. Thus, a "new" idea may have existed a long time ago, but because one is yet to develop a favourable or unfavourable attitude towards it, or reject or adopt it, it makes it a new innovation to the individual. As Rogers puts it, "the "newness" aspect of an innovation may be expressed in terms of knowledge, persuasion, or a decision to adopt" (p.11). He goes further to define technology as "a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome and usually has two components: a hardware and a software" (p.12).

As stated earlier, Rogers proposes four elements of diffusion: innovation, communication channel, time, and social system. An innovation is an idea or project that is perceived as new by an individual or the unit of adoption. SMS language is one of the youngest languages that have evolved from the use of SMS which is an application found in mobile phones used for text messaging. This language has both the written and spoken characteristics of a language. It is characterised by a significant use of abbreviations, numbers and punctuations which is adopted in order to minimise cost, save time and meet up with the limit of 160 characters per message. Rogers proposes four characteristics that help explain the rate of adoption of an innovation: (i) relative advantage, which is the degree to which an idea is considered superior to its predecessor, (ii) compatibility, which is the degree to which an innovation is seen as par with culture of the recipients, (iii) complexity, which is the degree to which an innovation is easily understood and used, and (iv) trialability, which is the degree to which an innovation is experimented on by the users. The use of mobile phones fit into these processes of adoption. It has helped people communicate not only through words but also visually. It is also very compatible with the cultures of recipients; peers who want to keep their conversations secretive

have really embraced texting. The SMS language has been easily embraced because of its ease of usage as the language adopted is that which is similar to spoken language and finally, it has been experimented on and found that teenagers who are used to phones and texting become addicted to it.

Communication channel which is the second element in the diffusion of an innovation is "the means by which messages get from one individual to another" (p.17). There are two ways by which this can be achieved; (i) Mass media channels that involve a mass medium, such as radio, television, newspapers, etc., where an idea or innovation is able to reach an audience of many; (ii) interpersonal channels which involves a face-to-face exchange between two or more people. Because the interpersonal channel links two or more individuals who are near peers, it is more effective in persuading an individual to adopt an idea. Youths want to be trendy as much as possible and this tend to persuade them to adopt what their peers are doing. Since SMS language is the most dynamic language today, youths who are creative when responding to texts influence each other with this skill. It has been found that SMS language adopts as many forms as possible, including numbers, and these youths would ensure that the channel they choose is suitable for what they are trying to communicate. This transfer of ideas (diffusion) is what Rogers calls *Homophily,* which "mostly occurs between two individuals who are alike or similar in certain attributes, such as beliefs, education, social status, etc." (p.18). He posits that more effective communication occurs when two individuals are homophilous, that is, they share common meanings and a mutual subcultural language, such as SMS language.

The third element in the diffusion of an innovation is Time. Time is an important element in the diffusion process, and it involves: (i) the first time an individual gains knowledge of an innovation, (ii) the lateness or earliness of adoption of the innovation, and (iii) the number of

members of the system that actually adopt the innovation in a given period. Time is an important aspect of SMS language in the sense that the more an adolescent is exposed to a number of texts from different people, the more the language develops with new lexical items and newly incorporated forms of textese. Therefore, the more people an individual chats with, the more knowledge he gains on the various kinds of SMS language, and being influenced into using it is not far-fetched.

The final element in the diffusion process is Social systems. This is "a set of interrelated units that are engaged in joint problem solving to accomplish a common goal" (p.24). Every social system has a social structure that adheres to a social norm. Norms are the established behaviour patterns for the members of a social system (p.27). These norms can either propagate change or be a barrier to it. Norms can operate at different levels (national, religious community, organisation or village) and they are kept by change experts or opinion leaders who influence the rate of adoption of an innovation. Opinion leadership is the degree to which an individual is able to influence other individuals' attitudes or overt behaviour informally in a desired way with relative frequency (p.28). Hence it is a kind of informal leadership which is earned and maintained by the individual's technical competence, social accessibility and conformity to the system's norm. They are more or less models to their followers. However, in any system, there are innovative opinions leaders and leaders who oppose change. This is witnessed in the case of SMS language and its supposed influence on academic writing. While one school of thought (opinion leaders) argue that the use of SMS language has no negative influence on academic writing and that in fact if anything, it affects academic writing positively, another school of thought argue that the use of SMS language is quite addictive, and it affects students' academic writing negatively. The opinion of these opinion leaders affects the rate of adoption of an innovation, and in this case the experts' voices are varied. Thus, the influence on the rate of

adoption of the innovation depends on the school of thought a particular individual want to subscribe to.

2.4.2 Perkins David and Salomon Gavriel's Low-Road/High-road Theory of Transfer of Learning

Transfer of learning occurs when "learning in one context or with one set of materials impacts on performance in another context or with other related materials" (1989, p.113). To understand this concept better, Perkins and Salomom cite an example with someone who is learning to drive or study physics. They explain that one who has learnt how to drive a car will apply the same mechanism when learning to drive a truck; and learning mathematics prepares one to study physics. They go further to discuss paths by which transfer occurs; this they call *Mechanisms of Transfer* and there are three mechanisms of transfer: (i) Abstraction (ii) Transfer by affordances and (iii) High road and low road transfer. For the purpose of this work, only the *High road and low road* mechanism of transfer which was proposed in 1989 will be examined.

According to Perkins and Salomon, "Low road transfer happens when stimulus conditions in the transfer context are sufficiently similar to those in a prior context of learning to trigger well-developed semi-automatic responses" (p. 122). In other words, when two tasks are closely related, skills previously acquired are semi-automatically transferred. In the case of transference when it comes to SMS language, there is the tendency that a student would make a knee-jerk transfer of learned habits to write a closely related task when given. For example, it is argued that those who use more textisms in their daily communication unintentionally transfer these to their Standard English writings, particularly in writings similar to informal texting. Low road transfer is otherwise known as reflexive transfer and it requires a well automatised pattern of response that are triggered by similar stimulus conditions. This is to say that a student will

transfer tactics used to solve homework problems when faced with similar problems on an exam. Perkins and Salomon give an example using a person moving into another household. He hires a truck for the first time and "finds the familiar steering wheel, shift and other features which evoke useful car-driving responses. Driving the truck is almost automatic, although in small ways a different task" (p. 123). This same way is it assumed that the excessive use of SMS language by students can trigger students to impulsively use it while writing a task they perceive as informal.

High road transfer on the other hand "depends on mindful abstraction from the context of learning or application and a deliberate search for connections" (p.123). This transfer is not reflexive as one must have to be intentional: What is the general pattern required? What is needed to solve the problem? What principles should be applied? What is known that might help? These questions and much more are needed in other to find a solution to the immediate task and thus, demands time for research, exploration and mental effort. An example would the relationship between a chess player and his use of the knowledge in political matters (p.123). He tries to make connections between the critical thinking process of chess and the dynamics of diplomacy required in politics. This is because the tasks are unrelated to each other and a conscious high road effect will be applied. High road transfer is also known as mindful transfer and requires mindful exploration. Thus, if students consider academic writing as a formal process, they will endeavour not to apply SMS language to their writing, as both contexts are different. Hence a high road transfer is applicable.

For consideration in the current study, students who practice high texting use would hypothetically transfer the use into writings that appear closely related to their everyday informal (texting) writing. The question for SMS language users is whether or not they view

school writing as formal or informal, and if the topic they are to write on determines their perception.

2.5 Summary

This chapter laid emphasis on the important terms that was used throughout this study which included SMS language, abbreviation, textese or textism. It then discussed past studies relevant to the research. These were categorised into three sub-headings: those who found a positive relationship between textese and academic literacy (Bushnell, Kemp and Martin, 2011; Shaziz, Shamim, Faisal, and Avais, 2013; Plester, Wood and Bell, 2008; Powell and Dixon, 2011). These researchers concluded that the use of SMS language by students actually boost their spelling skills and make them better spellers; Those who found a negative relationship (Geertsema, Hyman and Deventer, 2011; Mphahlele, Mashamaite, 2005; Odey, Essoh, and Endong, 2014; De Jonge, Kemp, 2012). These researchers argued that the use of SMS language really hampers the literacy of students. It makes them bad spellers, and many of the users transfer this informal language to their academic writing, which in turn costs them some points; Those who found mixed results (Muhammed, 2011; Winzker, Southwood, Huddlestone, 2009; Drouin and Davis, 2009; Wood, Maechem, Bowyer, Jackson, Tarczynski-Bowles, and Plester, 2011). These researchers on the other hand had results that showed that the influence of SMS language on academic writing has both a negative and a positive effect or does not affect academic writing in any way. The results of the research they carried out showed that, while SMS language was impacting a language skill positively, it was hampering another language skill. For instance, while the use of textese improved the reading skills of the students, it was damaging their spelling skills. This was lastly followed by the theoretical framework of this study which were Everett Rogers' Diffusion of Innovation Theory (1963), and Perkins David and Salomon Gavriel's Low-Road/High-road Theory of Transfer of Learning (1989). The

diffusion of innovation theory examined the social processes which a new innovation passes through while being immersed in a community or society. On the other hand, the Low-Road/High-Road theory of transfer of learning states that there is the tendency for individuals to transfer what they have learnt to another task especially when both tasks are similar.

3 METHODOLOGY

3.1 Introduction

This chapter describes the steps, processes, and rationale applied to the study. It discusses in detail how the research was conducted from the identification of respondents to the actual collation of data, its analysis, and presentation. It gives a step-by-step procedural map that ensures the study topic is subjected to an academic set of standards, and norms that govern scientific research. The research design to be used in this study is mixed research design. Explanations as to why this research approach is preferred and the unique characteristics inherent in mixed research are defined. The research questions are reiterated, data sources explained, and the data collection instruments stated.

3.2 Research Design

The research design used in this study is mixed research because it requires both quantitative and qualitative approaches. As the name implies, "a mixed method study is one that planfully juxtaposes or combines methods of different types (qualitative and quantitative) to provide a more elaborate understanding of the phenomenon of interest (including its context) and, as well, to gain greater confidence in the conclusion generated by the evaluation study" (Johnson et al. 2007, p. 119). This research design is chosen because it helps give a clearer understanding of the phenomenon investigated. The quantitative approach is used to analyse and draw conclusions on the significance and effect of the variables investigated, while the qualitative approach is used to describe, elaborate, and interpret the result gotten. It is considered appropriate for this study because both quantitative data and qualitative data are needed to answer the overarching research questions. The first research question is: is there any impact of SMS language and abbreviation on the spelling and punctuation habits of secondary school students while writing academic work? The second research question is: what forms or variants

of textese are most commonly seen in the academic writing of these students? The third research question is: are the students able to differentiate between formal and informal contexts in their writing? The quantitative approach is used to answer the first research question of the study, while the qualitative approach is used to answer the second and third research questions.

To answer these questions, the students were required to respond to ten research questions and also write an essay of about 150 words. These are primary data needed for analysis and interpretation. The responses from the questionnaire enabled the researcher to have an idea of their mobile phone usage and chatting attitude since it was not possible to ask the students to submit some of their text messages. The essay, on the other hand, was to enable the researcher to find out whether there would be features of textese in them. (see section 3.4 for an elaboration of the instruments used for the study). From the responses collected from both the questionnaires and essays, a descriptive statistic was established, upon which variables were extracted, and inductive statistics were carried out on them. The essays as primary data provided parameters upon which the dependent variables are hinged, and the independent variables were extracted from the questionnaire. The parameters established provided answers to research questions two and three, and the inductive analysis provided answers to research question one. The inductive analysis was carried out using Statical Package for Social Sciences (SPSS) software (28.0) after the data gotten from the primary sources were cleaned up on an excel sheet. The results were then interpreted for easy understanding. As can be seen, both the quantitative and the qualitative methods play a significant role in helping the researcher gain answers to the research questions posed. Analysing how such a combination can be effective as a research design, Johnson et al. posit, “at the research design stage, quantitative data can assist the qualitative component by identifying representative sample members, as well as outlying cases” (2007, p. 115).

3.3 Sample

The sample was selected using a simple random sampling technique. This sampling technique was chosen because it is a procedure that selects a sample of units from a population by chance, typically to facilitate generalisation from the sample to the population (Shadish, Cook, and Campbell, 2002). Only students between the ages of 13 to 16 years were targeted, as the main focus of this study was on secondary school students. Teenagers were deliberately selected, as the use of SMS is a preferred form of communication for them. According to Ling, who studied the SMS usage of 2003 teenagers in Norway, "among teens, this is the preferred form of mediated interaction surpassing instant messaging, e-mail, voice mobile telephony and even traditional fixed line phone calls. SMS messages have several characteristics that make it useful for teens and increasingly for other groups" (2005, p. 335).

Since the researcher lives in Stavanger, secondary schools within Stavanger were selected because of proximity. Four secondary schools were selected randomly, with 15 students randomly selected to represent the population. This makes a total of 60 students. However, when approached, the schools rejected the request to be sampled. Getting schools to participate in the study was proving difficult until the researcher's supervisor suggested and linked her up to a former master's degree student from the University of Stavanger, who is now a teacher in one of the secondary schools in Stavanger. An e-mail was sent to the teacher and the purpose of the research was presented. The teacher readily accepted to help. After getting approval from the teacher, the researcher sought ethical approval from the respondents. A consent form was applied for from the Norwegian Centre for Research Data (NSD) which the researcher sent to the teacher to seek the permission of his students who were willing to participate in the survey. The forms were signed by both students and their guardians because they were minors. A copy of the questionnaire and the essay topic were also sent across via e-mail. The teacher was asked

not to administer both the essay and the questionnaire together, as this would have given the students an idea of what the study was about. They were to write the essay first, before responding to the questionnaire, as responding to the questionnaire first would make them more conscious of their writing. After responding to both, they were then given the NSD form to sign. All the 38 students in the teacher's class were asked to participate, and 38 of them responded to the questionnaire. However, only 17 of the students participated in the writing of the essay, responding to the questionnaire, and signing of the consent form. The reason why some of the students who responded to the questionnaire but did not sign the consent forms and write the essay, was unknown to the researcher. The researcher could only assume that the students were willing to participate but did not gain the approval of their guardians.

The responses from the sample were supposed to be carried out and collected in the classroom, where the students would respond to the questionnaire and essay by writing with a pen/pencil. But because of covid-19 restrictions (as the whole school was in quarantine at that time), it became impossible to do so. The survey was carried out online, where the teacher then sent out the questionnaires and essay questions. The students respond to the questionnaire and essay topic using electronic gadgets and submitted it online. The teacher gathered all responses and shared them with the researcher on Google drive. Since only17 of the students responded to both the essay topic and the questionnaire, the study examined only those participants who did a combination of both for proper documentation and analysis. Out of the 17 students who responded, 10 of them were males and 7 of them, females.

Because this study was majorly quantitative, the random sampling techniques was most beneficial because it enabled the researcher to rely on assumptions of statistical theory to draw its conclusions from what was observed (Moore and McCcabe, 2003). This means that, if data was produced using random sampling, any statistics generated from the data can be assumed to

follow a specific distribution. In the case of this study, the data followed a normal distribution, according to Shapiro-Wilk's test of normality distribution which was run using SPSS.

3.4 Research Instruments

A structured questionnaire comprising of 10 questions was administered to the students to understand their 'mobile phone habit' when chatting. It aimed to find out how long the teenagers have been using mobile phones, if they chat with their phones, their use of SMS language and abbreviations while chatting, their texting frequency, if they consider their use of SMS language and abbreviation as a deliberate event or not, and if they would rather write words using SMS language or in full. The questions were adopted from a questionnaire administered by De Jonge Sarah and Nenagh Kemp (2010), who researched the effect of texting on spelling, morphological and orthographic awareness on Australian students within the ages of 13 and 15.

The questions were closed-ended, where the students had to choose answers from options given to them. The researcher purposefully ensured that the questions asked were brief and clearly understood. The language used which was English language, was simple, and edited to suit their level of understanding. This was confirmed by their teacher, who made some adjustments to the diction. Responses from the questionnaire were coded into a scale. For example, when asked how often they used SMS language and abbreviations the responses gotten from *'how often they use textese'* was coded into digits of 1, 2, and 3; 1 for *'sparingly'*, 2 for '*moderately'* and 3 for '*always'*. When asked if they preferred to write words in full or use abbreviations, responses gotten were also coded into digits of 1 and 2; 1 for '*writing in full'*, and 2 for '*abbreviations'*.

Essay writing was also collected from the students to see whether there were features of textese in their writing. They were asked to write an essay on which holiday they preferred between the summer and winter holidays. They were to write a minimum of 150 words. The essay was to serve two purposes: i) to find out whether the students would perceive the essay as a formal assignment and use a High-Road transfer of learning; or ii) whether the students would perceive the topic given as an informal one and adopt the Low-Road transfer of learning. This hypothesis proposes that there would be an automatic use of abbreviations and SMS language if they perceived the assignment as an informal one. Whereas, if they viewed the writing assignment as an academic test, they would adopt a conscious High-Road transfer of learning where they would be more careful.

3.5 Data Collection and Analysis

First of all, getting schools to accept using them as a sample was proving difficult until the researcher got linked to a teacher in one of the secondary schools in Stavanger through her supervisor. An email was sent to the teacher, and the cause the research would take regarding the sample was discussed. After getting approval from the teacher, the researcher sought ethical approval from the respondents. A consent form was applied for from the Norwegian Centre for Research Data (NSD) which the researcher sent to the teacher to seek the permission of his students who were willing to participate in the survey. The forms were signed by both students and guardians as they were minors.

A copy of the questionnaire and the essay topic was then sent to the teacher, who sent it out to his students. After waiting for two months, the responses came. The questionnaires and essay assignment were supposed to have been paper-based, handwritten and collected in the classroom, but because of the Covid-19 situation, it became difficult to make a physical

appearance and collection as the whole country was on locked down. The responses were then collected digitally by their teacher, who then gave access to the researcher. 38 students responded to the questionnaire but only 17 wrote the essay and signed the consent form. The researcher thought it was unethical to analyse the 38 responses from the questionnaire as some of them did not sign the consent forms. Thus, analyses were carried out on those who were able to respond to both the questionnaire and the essay, and also signed the consent form. The data collected was not anonymous, and the researcher was able to sort the students who had responded to both the essay and questionnaire.

Quantitative analysis: The responses gotten from the questionnaire were cleaned up, by arranging each parameter needed for the survey on a Microsoft Excel spreadsheet for easy referencing. The written essays were examined and features of textisms were extracted from them. The features formed the establishment of parameters upon which an inductive statistics analysis was carried out. This was followed by the extraction of two independent variables, which were responses gotten from *'how often they use textese while chatting'* and '*the preference of using textese against writing in full'*. Two dependent variables were also extracted, which were a cumulation of their '*spelling errors'* and '*punctuation errors'*. The responses gotten from *'how often they use textese'* were coded into digits of 1, 2, and 3; 1 for *'sparingly'*, 2 for '*moderately',* and 3 for '*always'*. Responses got from '*preference'* were also coded into digits of 1 and 2; 1 for '*writing in full'*, and 2 for '*textese'*. This was done for scaling purposes to run the required analysis. The data was then imported into Statistical Package for Social Sciences, SPSS software where a Simple Linear Regression Analysis was run. Before the Simple Linear Regression Analysis test was run, a normality test was run to ensure that the data was normally distributed. These generated results that was then analysed and interpreted in chapter four.

The essays collected were subjected to qualitative content analysis to determine to what extent SMS language and abbreviation occurred in their writing. The module of SMS language and abbreviations which were used to scrutinise the students writing was adopted from Verheijen and included: contractions, phonological abbreviations, initialisms, emoticons, typographic symbols, letter repetition, omission of punctuation and capitalization, excessive use of punctuations and capitals, clippings, accent stylisation and alpha-numeric combination (2013, p. 584).

Table 3.1 Examples of features of textisms observed

Textese	**Examples as seen in the students' essays**
Excess use of Paragraphs	I like winter more because I feel like summer is too hot, and I just start sweating. is more chill cause i love to go skiing and you don't get overheated. I also like winter more because I can sit inside and play video games and it's just more chill. I like to spend time with my family so when we are done skiing we play some card games and other stuff. When we go skiing we go to a place called haukeli, and there are 3 big jumps in a row and i like to jump them because it is fun. I like winter more than summer. But summer id fun too…
Clippings	is more chill cause i like to go skiing

Omission of capital letters	And I have to wear sunscreen which i find kind of annoying. And i look so shiny with it on but its better than getting cancer. But when i forget to take it on it hurts and i get super red. Ususally we go to kosovo or croatia because we have family in kosovo.
Omission of punctuations	During winter it's just sad and hoping for snow while in the summer it's a lot more sunny and happier at least that's what I think.
Excess use of punctuations	Go summer!!! But summer is fun too…
Accent stylisation	Compeditiv, kinda, wanna
Excess use of capital letters	I prefer summer break instead of winter break, it is because every winter break me and my family usually travel to our BORING cabin.
Use of comma instead of full stops	Sometimes it is so hot I can't sleep and I don't see all my friends, but it is not warm everyday or even every year, And my best friend's will i meet, So in short, the summer break is better than the winter break.
Use of exclamation instead of full stops	For me my closet looks the best in warm weather, which gives summer another plus! And personally i like feeling confident in some pretty clothes! But nothing beats summer break!

Contractions	Hadn't; don't; can't; won't; it's; isn't; I'm

3.6 Validity and reliability

Reliability is the extent to which the measurement instruments and procedures produce consistent results in different circumstances (Dornyei, 2007). Dornyei identifies three types of reliability: test-retest, which ensures the consistency of a measure across time; interrater, which ensures the consistency of a measure across raters or observers; and internal consistency, which ensures the consistency of the measurement itself (2007). For this study, the internal consistency was considered as the study tested for this by calculating the results gotten from the variables. When ANOVA was used to calculate the effect of the independent variables on the dependent variables, the result showed a significant effect. The researcher in other to test for reliability conducted a correlation test, using Pearson's correlation 2-tailed test, and the results showed a positive correlation between the variables. This showed that the results gotten from the Simple Linear Regression Analysis test was reliable. Also, because the primary data collected from both questionnaires and essays were not anonymous, the researcher referred to them to do a manual cross-check between responses.

Dornyei (2007) also identified that the validity of a measurement can be estimated on three types of evidence: i) construct, which has to do with the adherence of a measure to existing theory and knowledge. This study achieved this, as it reviewed past studies carried out by other researchers, had a theoretical framework upon which it was based, and adopted its questions from a study conducted by De Jonge and Kemp (2012); ii) content, which had to do with the extent to which the measurement covered all aspects of the concept being measured. This was achieved through the administering of questionnaires which helped give the researcher an idea of the length of time the students have all used mobile phones, their age, their texting manners

and their textese usage while chatting. The essay writing, on the other hand, was to find out whether there would be evidence of textisms. The essays were cross-checked using the examples of textisms given by (Verheijen, 2013) and a software called Grammarly; and lastly iii) criterion, which covers the extent to which the result of a measure corresponds to other valid measurements of the same concept. From the study, responses from both the questionnaire and the essays written showed a positive correspondence when tested. To test the internal validity of the study, measures were carried out using SPSS. The model summary of each test run on the independent and dependent variables showed a high confidence level. This showed that the majority of the variations in the dependent variables was related to textism use, while a minority was explained by other factors outside the study. (see section 4.4.1, tables 4.23; 4.27; 4.31; and 4.35).

However, because some of the variations found in the study can be explained through other extraneous factors, the study cannot boast of external validity. This means that the findings of the study cannot be used to generalise for the wider population of secondary school students in Norway. Besides, the researcher was able to sample only 17 students, which is only a fraction of all the secondary school students within Stavanger that fall within the age range that was studied.

3.7 Ethical considerations

Ethical considerations entail the integrity of a researcher while conducting a study. According to Bryman and Bell (2007), the following points represent the most important principles related to ethical considerations while carrying out research:

- Research participants should not be subjected to harm in any way whatsoever: The researcher reassured the participants that their involvement to be sampled was safe, and they have the right to withdraw from the study.
- Respect for the dignity of research participants should be prioritised: The researcher ensured to let them know that they were not going to be penalised in any way regardless of what they wrote and responded to, as there were no right or wrong answers, and that their responses were purely for research purposes.
- Full consent should be obtained from the participants prior to the study: Prior to the study, the students were given consent forms issued by Norsk senter for forskningsdata (NSD) to sign as willing participants, of which they retained the right to withdraw from the study any time they wanted to. The researcher also let the participants understand that it was necessary that their guardians needed to sign as well since they were all below the age of 18.
- Adequate level of confidentiality of the research data should be ensured: To ensure this, the responses collected from the primary sources were kept confidential between the teacher who assisted and the researcher. No external persons had access to the data, as it is encrypted and would self-destruct by the end of the study (31st, August 2021).
- Anonymity of individuals and organisations participating in the research has to be ensured: Though the researcher was aware of the participants in the study and could use their responses gotten from the questionnaire to correspond to the written essays, the researcher ensured to keep the respondents anonymous while presenting results and interpretation of the analyses.
- Any type of communication in relation to the research should be done with honesty and transparency: The researcher ensured to cite the works of other authors used in the study and acknowledged ownership accordingly through adequate referencing.

- Any type of misleading information, as well as representation of primary data findings in a biased way must be avoided: The study upheld the ethic of scientific conduct by not falsifying or distorting any data. A high level of objectivity in discussions and analyses was maintained.

These were carefully considered during the cause of this study, and strict adherence was kept, ensuring that there were no violations of rights.

3.8 Summary

This chapter discussed the research design used to carry out this study which was a mixed research design (section 3.2). This required the use of quantitative and qualitative approaches. The quantitative approach was used to extract the parameters which were used as variables to draw analysis and produce results using SPSS. This was used to answer the first research question of this study. The qualitative approach was used to interpret the results produced and elaborate on the findings of the features of textese as seen in the essays. This was used to answer research questions two and three. This was followed by section 3.3 which discussed how the sample was found, recruited, and selected. The sample size was also discussed, and the number that responded was also provided. Section 3.4 discussed the instruments employed while carrying out this study. A questionnaire was used to find out the mobile phone usage of the respondents, as well as their textese use while chatting. This primary data gave the background upon which the independent variables were extracted. The essay writing was another primary instrument upon which parameters used as the dependent variables were drawn from. This is followed by section 3.5 which discussed the actual process used in the collection and analysis of the data. Section 3.6 analysed the validity and reliability of what gave the study credibility. Section 3.7 discussed the necessity of ethics while conducting research. It identified seven

points to be put into consideration while carrying out research. Lastly was section 3.8 which discussed the summary of the chapter by piecing all the sections together.

4 PRESENTATION OF FINDINGS AND RESULTS

4.1 Introduction

This chapter presents the findings, results, analyses, and interpretations of the fieldwork done in line with the design that was introduced and explained in chapter three section 3.5. The questionnaire and essays collected from the respondents sought to answer the research questions set out in chapter one of the study. The research questions addressed in this study were: What are the effects of SMS language on the spelling and punctuation habits of students while communicating through Standard English in academic work? What variants of SMS language and abbreviations are commonly seen in the academic writing of the students? Are the students able to differentiate between the formal and informal contexts in their writing?

The presentation and interpretation of results were based on the questionnaire and essay administered to the sampled respondents. Hence, a mixed method of quantitative and qualitative approaches was adopted to explicate the findings of the research better. Both the quantitative and qualitative method was given equal priority as the data collected from the questionnaire and essays required both figures and a descriptive explanation. The quantitative method was used to find out percentages and correlations between variables, while the qualitative method was used to interpret results from the essays. Both descriptive and inductive statistics was conducted for the quantitative results. For clarity purposes, this chapter is presented under the following sections: section 4.2 presents a descriptive statistic of the sample with its analysis; section 4.3 presents a descriptive statistic of features of textisms extracted from the essays with its analysis; section 4.4 carries out an inductive statistic and analysis of the variables; section 4.5 presents results to research questions two and three; and lastly, section 4.5 provides a brief summary of the chapter.

4.2 Demographic distribution of respondents with interpretation

The following tables show demographic information of the respondents as well as some background information about their mobile phone usage since it was impossible to collect samples of their chats.

Table 4.1: Summary of gender distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	F	7	41.2	41.2	41.2
	M	10	58.8	58.8	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

Results of analysis in table 4.1 show that out of 17 respondents, 7 (41.2%) were females and 10 (58.8%) males.

Table 4.2: Summary of age distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	13	7	41.2	41.2	41.2
	14	10	58.8	58.8	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

Results of the analysis in table 4.2 show that the sample had a mean age of 14, which was the target age to be sampled.

Table 4.3: Summary of age distribution as at when they started using phones

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	6	1	5.9	5.9	5.9
	7	3	17.6	17.6	23.5
	8	2	11.8	11.8	35.3
	9	4	23.5	23.5	58.8
	10	4	23.5	23.5	82.4
	11	3	17.6	17.6	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

The students were asked to report the age at which they began using mobile phones. As presented in table 4.3, of the 17 respondents, fewer than half started at the age of nine or younger, whereas a third began at age 10, and 18 percent at age 11.

Table 4.4: Summary of how long they have used phones

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	2	11.8	11.8	11.8
	3	2	11.8	11.8	23.5
	4	5	29.4	29.4	52.9
	5	3	17.6	17.6	70.6
	6	2	11.8	11.8	82.4
	7	2	11.8	11.8	94.1
	8	1	5.9	5.9	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

The students were asked how long they have used a mobile phone, and results presented in table 4.4 show that a third have used it for 4 years, a little less than a third for less than 4 years, a little less than a third for 5 years or more, and one for 8 years. Thus, the average length of time they have all used a phone was 4years and 7 months.

Table 4.5: Preference between texting and calling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Call	2	11.8	11.8	11.8
	Text	15	88.2	88.2	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

The students were asked if they preferred texting or calling, of which a vast majority reported that they preferred texting (88 percent). (See table 4.5).

Table 4.6: How often do you chat in a day

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Occasionally	2	11.8	11.8	11.8
	Once	6	35.3	35.3	47.1
	Severally	9	52.9	52.9	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

To find out how frequently the students chat in a day, results of analysis in table 4.6 show that out of 17 respondents, 6 (35.3%) of them admitted to chatting once daily, 1 (5.9%) admitted to

chatting just occasionally (few times in a day), and 10 (58.8%) admitted chatting several times a day.

Table 4.7: Languages used in chatting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Both	11	64.7	64.7	64.7
	Norsk	6	35.3	35.3	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

The students were asked the languages they used while chatting, and results of analysis in table 4.7 show that out of 17 respondents, 11 (52.9%) of them chat with both English and Norwegian, while 6 (35.3%) of the respondents chat with only Norwegian.

Table 4.8: How often textisms are used when chatting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Always	7	41.2	41.2	41.2
	Moderately	6	35.3	35.3	76.5
	Sparingly	4	23.5	23.5	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

When asked how often they used textese while chatting, results of the analysis in table 4.8 show that out of the 17 respondents, 7 (41.2%) of the students responded to using textese always while chatting, 6 (35.3%) responded to using textese moderately, and 4 (23.5%) responded to using them sparingly.

Table 4.9: Intentional or unintentional use of textese

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Intentional	14	82.4	82.4	82.4
	Unintentional	3	17.6	17.6	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

The students were asked if they used textese intentionally or unintentionally, of which a vast majority (82.4%) admitted that their use of textese was intentional, while 17.6% responded to using them unintentionally. (See table 4.9).

Table 4.10: Preference between writing words in full or using textese

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Use SMS lang	12	70.6	70.6	70.6
	Write in full	5	29.4	29.4	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

When asked their preference between writing in full and using textese while chatting, a vast majority reported a preference of using textese to writing in full. (See table 4.10).

4.3: Demographic distribution of features of textese as observed in the essays with interpretation

The students were asked to write an essay of about 150 words on the holiday they preferred between the summer holiday and the winter holiday. This was to ascertain whether there would

be features of textisms in their essays and whether the students would be able to differentiate the context of writing (formal or informal). The written essays were run through 'Grammarly'. This is an app that cross-check written works for a variety of errors, ranging from punctuations to incorrect spellings, to sentence structures and grammar. This was mainly used to point out errors in punctuations. Some features of textese were observed in their essays, and this included: contractions, clipping, excess paragraphing, omission of capital letters, omission of punctuations, excess use of punctuations, accent stylisation, excess capitalisation, and commas and exclamation marks in place of a full stop. This was analysed one after the other in the descriptive presentations below:

Table 4.11: Excess Paragraphing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	10	58.8	58.8	58.8
	1	2	11.8	11.8	70.6
	2	1	5.9	5.9	76.5
	3	1	5.9	5.9	82.4
	4	2	11.8	11.8	94.1
	9	1	5.9	5.9	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

Results of the analysis in table 4.11 show that 12 of the 17 essays did not have paragraphs outside conventional academic writing, while the remainder of the essays had between 2 and 9 extra paragraphs outside conventional academic paragraphing. For instance, one of the respondent's essays was written thus,

"I personally prefer Summer, mostly because of the weather, and because it is a lot warmer outside.

I like to be outside when it is summer because there is so much to do.

You can go swimming, camping, go on the bike, or just have fun with your friends.

One of the reasons why I prefer summer is because of the clothing.

Another reason why i like the summer is because the vacation is longer, and you are able to spend more time with your family and friends.

I also prefer the summer because I feel like there is so much to do, and I just feel so comfortable in the summer clothings.

I live in a city where it rains a lot, and if you are lucky there is snow in the winter.

But most of the year it is only rain, although in the summer it sometimes gets really hot.

And that is why I enjoy it better than winter"

Table 4.12 Clippings

Valid	1	1	5.9	100.0	100.0
Missing	System	16	94.1		
Total		17	100.0		

Source: Field work, 2021.

Results of the analysis in table 4.12 show that out of 17 essays collated, 16 (94.1%) of them had no clippings, and 1 (5.9%) had only one clipping. The word 'because' was clipped to '*cause'.*

Table 4.13: Omission of capital letters

Valid	0	6	35.3	35.3	35.3
	1	3	17.6	17.6	52.9
	2	2	11.8	11.8	64.7
	3	1	5.9	5.9	70.6

	4	3	17.6	17.6	88.2
	5	2	11.8	11.8	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

Results of the analysis in table 4.13 show that out of the 17 essays collated, more than half of students had some letters that should have been written with an uppercase, written in lowercase. The most common observed, was the use of 'I' written as 'i'. This is followed by names of cities and countries written all in lowercase. For example, one of the respondents wrote '*…kosovo'* and '*croatia'*.

Table 4.14: Omission of punctuations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	11.8	11.8	11.8
	1	4	23.5	23.5	35.3
	2	1	5.9	5.9	41.2
	3	3	17.6	17.6	58.8
	4	2	11.8	11.8	70.6
	5	2	11.8	11.8	82.4
	6	2	11.8	11.8	94.1
	7	1	5.9	5.9	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

When run through Grammarly, results showed that there were 52 omitted commas (,) and full stops (.), with full stops being the majority omitted. A little less than half (41.3 percent) of the students had more omitted punctuations in their essay, while a little above half had fewer

punctuations omitted. (See table 4.14). For example, some of the respondents did not use full stops at the end of declarative sentences.

"I like summer better than winter because I prefer the warmth

I like summer holidays because it is warm and the holiday is very long

In the summer i play a lot of games and I don't need to stress"

Table 4.15: Excess use of punctuations

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	88.2	88.2	88.2
	1	1	5.9	5.9	94.1
	3	1	5.9	5.9	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

Results of the analysis in table 4.15 show that out of 17 essays collated, 15 (88.2%) did not use excess punctuations, 1 (5.9%) had one use of excess punctuation, and 1 (5.9%) had three use of excess punctuations. For example, one of the students made use of excess dots that was not intended as an ellipsis. He wrote, "*But summer is fun too…"*.

Table 4.16: Accent stylisation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	14	82.4	82.4	82.4
	1	3	17.6	17.6	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

Results of the analysis in table 4.16 show that out of 17 collated essays, 14 (82.4%) of them did not have any accent stylisation seen in them, whereas 3 (17.6%) essays had one each. The words stylised were 'kind of', which was written as '*kinda',* 'want to' was written as *'wanna'*, and 'competitive' was written as *'competitiv'.*

Table 4.17: Excess use of capital letters

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	64.7	64.7	64.7
	1	4	23.5	23.5	88.2
	3	1	5.9	5.9	94.1
	4	1	5.9	5.9	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

Results of the analysis in table 4.17 show that out of 17 essays collated, 11 (64.7%) of them did not have excess capitalisations, 4 of them had one each, 1 (5.9%) had three, and 1 (5.9%) had a total of four excess capitalisations. For instance, one of the respondents wrote, *"…usually travel to our BORING cabin, I mean it is cosy but boring".* Another respondent wrote, *"…go on hike and A LOT more*".

Table 4.18: Use of commas in place of full stops

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	10	58.8	58.8	58.8

	1	2	11.8	11.8	70.6
	2	3	17.6	17.6	88.2
	3	1	5.9	5.9	94.1
	5	1	5.9	5.9	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

Results of the analysis in table 4.18 show that out of 17 essays collated, 10 (58.8%) of the respondents had made use of full stops at the appropriate places, 2 (11.8%) of the respondents each made use of one comma in place of full stop, 3 (17.6%) respondents each made use of two commas in place of full stops, 1 (5.9%) used three commas at the end of three sentences instead of full stops, and 1 (5.9%) used five commas at the end of five sentences instead of full stops. For instance, one of the respondents wrote:

"*When it is winter vacation, I like to go skiing and sledding if it's snow, I really enjoy having snowball fights with friends, but I don't like that the vacation only lasts one week, and there's not usually so much snow, but more rain. I like the summer vacation much more than the winter one, because it's warmer and not as much rain, I also really like to swim in the sommer, and instead of one week, The vacation lasts two months, Also the sun doesn't go down before around ten pm.*"

From this respondent's essay, it can be seen that there are a lot of commas used even at places where there should be full stops.

Table 4.19: Use of exclamation marks in place of full stops

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	13	76.5	76.5	76.5

	1	2	11.8	11.8	88.3
	2	2	11.8	11.8	100.0
	Total	17	100.0	100.0	

Source: Field work, 2021.

Results of the analysis in table 4.19 show that out of the 17 essays collated, 13 (76.5%) of the respondents did not use exclamation marks, 2 respondents each made use of exclamation marks in one of their sentences, while another 2 respondents each made use of exclamation marks in two separate sentences. For instance, one respondent wrote:

"Many things are closed due to covid-19 but there are plenty of summer activities that are still available in summer. And personally i like feeling confident in some pretty clothes! For me my closet looks the best in warm weather, which gives summer another plus!

Thank you for reading!

This is an illustration of where the underlined exclamation marks were used outside traditional English writing conventions observed in one of the essays of the respondents.

Table 4.20: Contractions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	23.5	23.5	23.5
	1	4	23.5	23.5	47.1
	2	2	11.8	11.8	58.8
	3	3	17.6	17.6	76.5
	4	2	11.8	11.8	88.2
	6	1	5.9	5.9	94.1
	7	1	5.9	5.9	100.0

	Total	17	100.0	100.0

Source: Field work, 2021.

Results of the analysis in table 4.20 show that a little less than half (41.2 percent) of the students had 30 contracted words in their essays, while more than half of the students (58.8 percent) had only 8 contractions. '*It's'* for 'it is', '*don't'* for 'do not', '*can't*' for 'cannot', etc. are some of the examples of contractions observed in the respondents essays.

4.4 Extraction of variables

Research question one: To answer the first overarching research question which was "Is there any impact of SMS language and abbreviation (textese) on the spelling and punctuation habits of secondary school students while writing academic work?", four variables were established: two independent variables which were 'how often they abbreviate' and 'preference of using textese against writing in full', and two dependent variables which were 'spelling errors' and 'punctuations errors'. The dependent variables were gotten by adding the total number of spelling errors and punctuation errors as observed in their essay writing. The parameters that made up the spelling errors were clippings (see table 4.12), excess use of paragraphs (see table 4.11), omission of capitals (see table 4.13), accent stylisation (see table 4.16), excess use of capitals (see table 4.17) and contractions (see table 4.20). Omission of punctuations (see table 4.14), excess use of punctuations (see table 4.15), the use of commas in place of full stops (see table 4.18) and exclamation marks in place of full stops (see table 4.19) were parameters selected as punctuation errors. A normality test was then conducted on the dependent variables using Statistical Package for Social Sciences (SPSS 28.0) to verify that the data has a normal distribution.

Table 4.21: Normality test on dependent variables

	Kolmogorov-Smirnov[a]	Shapiro-Wilk

	Statistic	df	Sig.	Statistic	df	Sig.
Total spelling errors	.144	17	.200*	.906	17	.084
total punctuation errors	.116	17	.200*	.926	17	.190

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Result of test analysis in table 4.21 shows the test of normality conducted on the dependent variables to find out whether the data is normally distributed. The result indicated that the calculated p-value for spelling errors (p = 0.084) and for punctuation errors (p = 0.190) were greater than 0.05 (p > 0.05). This means that the data for both dependent variables followed a normal distribution.

4.4.1 Analysis of variables using SPSS

After the test of normality, each dependent variable was analysed against each independent variable, using Simple Linear Regression Analysis, to note if there was any relationship between the variables. To calculate this, responses from the independent variable (how often textese is used) was coded on a scale of 1, 2 and 3, and the independent variable (preference of textese to writing in full) was coded on a scale of 1 and 2 (see section 3.5). The relationship between 'preference' and 'spelling errors' was analysed first, followed by 'how often textese is used' and 'spelling errors'. 'Preference' and 'punctuation errors' was then analysed, and lastly, 'how often textese is used' and 'punctuation errors'. The results are presented in the tables below:

Table 4.22: Analysis of preference on spelling

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	207.451	1	207.451	42.822	<.001[b]
	Residual	72.667	15	4.844		
	Total	280.118	16			

a. Dependent Variable: Total spelling errors

b. Predictors: (Constant), preference

Result of analysis in table 4.22 shows the predictive composite effect of preference on spelling errors. The result indicates that the calculated F-value of 42.822 is greater than the critical F-value of 4.54 at 0.05 level of significance with 1 and 15 degrees of freedom. This means that there is a significant effect of preference to use textese or writing in full on spelling errors.

Table 4.23: Predictor of variation of spelling errors

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.861[a]	.741	.723	2.201	.741	42.822	1	15	<.001	2.745

a. Predictors: (Constant), preference

b. Dependent Variable: Total spelling errors

The R^2 of the simple linear regression in table 4.23 measures the degree of determination coefficient of predictor (preference) on spelling. It predicts that 74.1% of the variation in spelling is explained by the variation of predictor (preference), while 25.9% of the variations in spelling is explained by other variables which are extraneous to the study.

Table 4.24: Proof of impact of preference on spelling

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	-6.667	2.069		-3.223	.006	-11.076	-2.257
	Preference	7.667	1.172	.861	6.544	<.001	5.170	10.164

a. Dependent Variable: Total spelling errors

The coefficient of 7.667 (766.7%) in table 4.24 shows that, a percentage increase in preferences while other variables are held constant would lead to 766.7% increase in spelling errors. The t-statistics in the table shows that, the calculated t-value for preferences (6.544) is greater than the critical t-value of 2.131 at 0.05 level of significance with 1 and 15 degrees of freedom. This means that the predictor (preference) has a significant effect on spelling errors.

Table 4.25: Validity of significant correlation between preference and spelling

Correlations

			Total Spelling errors	Preference
Total Spelling errors		Pearson Correlation	1	.861**

	Sig. (2-tailed)		<.001
	N	17	17
Preference	Pearson Correlation	.861**	1
	Sig. (2-tailed)	<.001	
	N	17	17

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis conducted in table 4.25 also shows that preference is positively correlated to spelling errors with $\rho = 0.861$. This means that, as the use of textese increases, spelling errors will increase, and this is significant with p-value < 0.001, which is less than 0.01 correlation significant level. This agrees with the results stated so far.

Table 4.26: Analysis of how often textese is used on spelling

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	255.915	1	255.915	158.611	<.001[b]
	Residual	24.202	15	1.613		
	Total	280.118	16			

a. Dependent Variable: Total Spelling errors

b. Predictors: (Constant), How often textese is used

Results of analysis in table 4.26 show the predictive composite effect of how often the students used textese on spelling errors. The results indicate that the calculated F-value of 158.6 is

greater than the critical F-value of 4.54 at 0.05 level of significance with 1 and 15 degrees of freedom. This means that there is a significant effect of how often textese is used on spelling errors.

Table 4.27: Predictor of variation of spelling errors

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.956[a]	.914	.908	1.270	.914	158.611	1	15	<.001	2.156

a. Predictors: (Constant), How often textese is used

b. Dependent Variable: Total spelling errors

The R^2 of the simple linear regression in table 4.27 measures the degree of determination coefficient of predictor (How often textese is used while chatting) on spelling errors. It predicts that 91.4% of the variation in spelling is explained by the variation of predictor (how often textese is used while chatting), while 8.6% of the variations in the spelling errors is explained by other variables which are extraneous to the study.

Table 4.28: Proof of impact of how often textese is used on spelling

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-4.348	.908		-4.788	<.001

	How often textese is used	4.944	.393	.956	12.594	<.001

a. Dependent Variable: Total spelling errors

The coefficient in table 4.28 of 4.944 (49.4%) shows that a percentage increase in the use of abbreviation while other variables are held constant, would lead to 49.4% increase in spelling errors. The t-statistics in the table show that the calculated t-value (12.6) for how often textese is used, is greater than the critical t-value of 2.131 at 0.05 level of significance with 1 and 15 degrees of freedom. This means that the predictor has significant effect on spelling.

Table 4.29: Validity of significant correlation between how often and spelling errors

Correlations

		Total Spelling errors	How often textese is used
Total Spelling errors	Pearson Correlation	1	.956**
	Sig. (2-tailed)		<.001
	N	17	17
How often textese is used	Pearson Correlation	.956**	1
	Sig. (2-tailed)	<.001	
	N	17	17

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis conducted also shows that how often textese is used while chatting, is positively correlated to spelling errors with ρ = 0.956. This means that as the use of textese increases, spelling errors will increase, and this is significant with p-value <0.001 which is less than 0.01 correlation significant level. This also agrees with results stated so far.

Table 4.30: Analysis of preference on punctuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	72.001	1	72.001	14.976	.002[b]
	Residual	72.117	15	4.808		
	Total	144.118	16			

a. Dependent Variable: total punctuation errors

b. Predictors: (Constant), preference

Results of analysis in table 4.30 show the predictive composite effect of preference on punctuation errors. The results indicate that the calculated F-value of 14.976 is greater than the critical F-value of 4.54 at 0.05 level of significance with 1 and 15 degrees of freedom. This means that there is a significant effect of preference on punctuation errors.

Table 4.31: Predictor of variation of punctuation errors

Model Summary[b]

Model	R				Change Statistics	

		R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.707[a]	.500	.466	2.193	.500	14.976	1	15	.002	2.770

a. Predictors: (Constant), Preference

b. Dependent Variable: total punctuation errors

The R^2 of the simple linear regression in table 4.31 measures the degree of determination coefficient of predictor (preference) on punctuation errors. It predicts that 50% of the variation in punctuation errors is explained by the variation of predictor (preference), While 50% of the variations in the punctuation error is explained by other variables which are extraneous to the study.

Table 4.32: Proof of impact of preference on punctuation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	-3.117	2.061		-1.512	.151	-7.509	1.276
	Preference	4.517	1.167	.707	3.870	.002	2.029	7.004

a. Dependent Variable: total punctuation errors

The coefficient in table 4.32 of 4.517 (451.7%) shows that a percentage increase in preferences while other variables are held constant, would lead to 451.7% increase in punctuation errors. The t-statistics in the table show that the calculated t-value for preferences (3.87) is greater than the critical t-value of 2.131 at 0.05 level of significance with 1 and 15 degrees of freedom. This means that the predictor (preference) has significant effect on punctuation errors.

Table 4.33: Validity of significant correlation between preference and punctuation

Correlations

		total punctuation errors	Preference
total punctuation errors	Pearson Correlation	1	.707**
	Sig. (2-tailed)		.002
	N	17	17
Preference	Pearson Correlation	.707**	1
	Sig. (2-tailed)	.002	
	N	17	17

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis conducted in table 4.33 also shows that preference of either writing in textese or writing in full is positively correlated to punctuation errors, with $\rho = 0.707$. This means that as the use of textese increases, punctuation errors will increase, and this is significant

with p-value = 0.002, which is less than 0.01 correlation significant level. This, thus, agrees with the results stated so far.

Table 4.34: Analysis of how often textese is used on punctuation

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	93.179	1	93.179	27.439	<.001[b]
	Residual	50.938	15	3.396		
	Total	144.118	16			

a. Dependent Variable: total punctuation errors

b. Predictors: (Constant), How often textese is used

Results of analysis in table 4.34 show the predictive composite effect of how often textese is used on punctuation errors. The results indicate that the calculated F-value of 27.439 is greater than the critical F-value of 4.54 at 0.05 level of significance with 1 and 15 degrees of freedom. This means that there is a significant effect on 'how often textese is used' on punctuation errors

Table 4.35: Predictor of variation of punctuation errors

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.804[a]	.647	.623	1.843	.647	27.439	1	15	<.001	1.498

a. Predictors: (Constant), How often textese is used

b. Dependent Variable: total punctuation errors

The R^2 of the simple linear regression in table 4.35 measures the degree of determination coefficient of predictor (how often textese is used) on punctuation errors. It predicts that 64.7% of the variation in punctuation errors is explained by the variation of predictor (how often textese is used), while 35.3% of the variations in the punctuation errors is explained by other variables which are extraneous to the study.

Table 4.36: Proof of impact of how often textese is used on punctuation errors

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	-1.904	1.318		-1.445	.169	-4.713	.904
	How often textese is used	2.983	.569	.804	5.238	<.001	1.769	4.197

a. Dependent Variable: total punctuation errors

The coefficient in table 4.36 of 2.983 (298.3%) shows that a percentage increase in 'how often textese is used' while other variables are held constant, would lead to 298.3% increase in punctuation errors. The t-statistics in the table show that, the calculated t-value for preferences (5.238) is greater than the critical t-value of 2.131 at 0.05 level of significance with 1 and 15 degrees of freedom. This means that the predictor (how often textese is used) has significant effect on punctuation errors.

Table 4.37: Validity of significant correlation between how often textese is used on punctuation

Correlations

		How often abbreviation is used	total punctuation errors
How often textese is used	Pearson Correlation	1	.804**
	Sig. (2-tailed)		<.001
	N	17	17
total punctuation errors	Pearson Correlation	.804**	1
	Sig. (2-tailed)	<.001	
	N	17	17

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis conducted in table 4.37 also shows that the use of textese is positively correlated to punctuation errors with $\rho = 0.804$. This means that as the use of textese increases, punctuation errors will increase, and this is significant with p-value < 0.001 which is less than 0.01 correlation significant level. This result also agrees with the tests conducted so far.

4.5 Analysis of Features of Textese as Seen in the Students' Essays

Research question two: The second research question asked was: what forms or variants of textese are most commonly seen in the academic writing of these students? Through the close

observation of the students' essays, the following features were noticed using Verheijen's module of textisms examples. These features were presented starting from the most dominant to least dominant: Omission of punctuations: This was the most dominant feature of textese observed in the students' writing. Punctuations analysed as omitted were mainly full stops (.) and commas (,), and they were fifty-two in all, (see table 14). It is either they forgot to put full stops at the end of the sentences or did not think it was necessary. This is followed by contractions with thirty-eight shortenings used, (see table 20). Third most dominant feature was the use of commas in place of full stops. This occurred sixteen times, (see table 18). The fourth most dominant feature was excess use of capitals, occurring eleven places, (see table 17). Following these were the least dominant features of textese which included the use of exclamation marks in place of full stops, and this occurred six times (see table 19). This was followed by the excess use of punctuation (see table 15), which occurred merely four times. Next was accent stylisation occurring at three places in their essays, (see table 16), and the least dominant feature of textese was clippings (see table 12), which appeared once.

Research question three: Are the students able to differentiate between formal and informal contexts in their writing? To answer the third research question on students' perception of the essay topic, it was discovered that some of the students may have perceived the essay question as an informal one and responded accordingly. This could be attributed to the reason why there were certain features of textisms in their writing, especially their use of contractions. However, this is not a certainty, as the students were not given another topic perceived as formal by traditional English standards, such as a letter of permission for example. If the students were opportuned to write another topic, then a proper comparison could have been made, and a proper conclusion drawn. Though the researcher found out that there was a possibility of a Low-Road transfer of learning, which suggests that there was an automatic transfer of learnt skills

since chatting and the topic given seemed to be both informal, conclusions to this research question is incomplete.

4.6 Summary

This chapter looked into the results gathered from the collation of the questionnaire and essays written by the students. Responses from the questionnaire and written works were analysed and interpreted. The findings were explicated in line with the research questions posed in chapter one. A discussion of these findings would be elaborated on in the following chapter.

5 PRESENTATION OF FINDINGS

5.1 Discussion

The research question addresses how SMS language and abbreviation affect the academic writing of secondary school students in Norway. Finding the relationship between SMS language and abbreviation and academic writing was examined through the following sub-research questions:

- Is there any impact of students' use of SMS language and abbreviation on the spelling and punctuation habits of secondary school students while writing academic work?
- What forms or variants of SMS language and abbreviations are most commonly seen in the academic writing of these students?
- Does the topic given determine whether the students would perceive it as a formal or informal task?

When identifying case study schools for this research, the initial plan was to select students from four different secondary schools. However, because of the covid pandemic, it became impossible to do. Thus, the researcher had to make do with students from one secondary school. The researcher employed two research tools: a questionnaire and an essay question. Thirty-eight students responded to the questionnaire and seventeen students responded to the essay. For easy collation and analysis, only students who responded to both the questionnaire and the essay were analysed.

This chapter first discusses the main findings from the questionnaire and essay related to the research questions. It presents a descriptive analysis of the results presented in chapter four. This is followed by the recommendation, and finally the limitation of the current research.

5.2 Research Question One:

Is there any impact of SMS language and abbreviation (textese) on the spelling and punctuation habits of secondary school students while writing academic work? To answer this, the results were analysed based on the two dependent variables surveyed which were spellings and punctuations.

5.2.1 Spelling

This research investigated the effects of textese on the spelling habit of secondary school students. It explored the relationship between students' use of SMS language and abbreviation while chatting and its impact on their spellings. The results of analysis using Simple Linear Regression test statistics showed the predictive composite effect of SMS language preference on spelling. The result indicated that the F-value of 42.822 is greater than the critical F-value of 4.54 at a 0.05 level of significance with 1 and 15 degrees of freedom. This means that there was a significant effect between the preference to use SMS language or writing in full on the spelling of students. A Simple Linear Regression test was also run on 'how often textism is used' on spelling, and results showed that the F-value of 158.611 is greater than the critical F-value of 4.54 at a 0.05 level of significance. This means that the frequency of textism had significant effect on spelling. Students who responded to always using SMS abbreviation while chatting had more spelling errors, with the omission of capitalisation being the predominant error observed. Names of cities and the letter 'I' were mostly written in the lowercase. Researchers Tagliamonte and Denis, who in a study carried out on teenagers from high schools in Toronto, found out that the use of 'I' in the lower case was a frequent feature of Instant Message users (2008, p. 14). Users of SMS language and abbreviation are not bothered with capitalisation, so long as the message being conveyed is not affected. Accent stylisation and clipping were also observed as spelling errors, and those who made this error responded to using SMS language moderately.

When a predictor test was run using the Simple Linear Regression analysis test, it was found that 74.1% of the variation in spelling was explained by the variation of predictor (preference), while 25.9% of the variation in spelling was explained by other variables which are extraneous to the study. Thus, it was deduced that students who preferred to use SMS language while chatting and responded that they use SMS language and abbreviations always while chatting, reported to have had more spelling errors. Again, when a predictor test was run on 'how often abbreviation is used' against spelling, results showed that 91.4% of the variation was directly related to spelling, while 8.6% was due to other factors extraneous to the study. This means that the frequent use of SMS language and abbreviation by students has an impact on their spelling habit. When a correlation test was run using Pearson's 2-tailed test, results showed that there was a positive correlation between textese and academic writing. This affirms the findings that some researchers have on the influence of the use of SMS language and abbreviation on academic writing of adolescents (Oluga and Babalola, 2013; De Jonge and Kemp, 2012).

5.2.2 Punctuation

This research also investigated the effect the use of SMS language and abbreviation had on the punctuation habit of secondary school students. The result of analysis using Simple Linear Regression test statistics showed the predictive composite effect of the SMS language and abbreviation preference on punctuations. The results indicated that the calculated F-value of 14.976 is greater than the critical F-value of 4.54 at 0.05 level of significance with 1 and 15 degrees of freedom. This means that there is a significant correlation between the preference to use SMS language and abbreviation or writing in full on the punctuation habit of the students. Results showed that students who responded to prefer using SMS language and abbreviation while chatting had more punctuation errors made. When the independent variable (how often SMS language is used) was run against the dependent variable (punctuation), results showed

that the calculated F-value of 27.439 was greater than the critical F-value of 4.54 at 0.05 level of significance with 1 and 15 degrees of freedom. When a predictor test was run between the independent variable and the dependent variables, result showed that there was significant impact (see tables 4.31 and 4.35). Omission of punctuation (for example, not adding full stop (.) at the end of sentences), excess use of full stop (for example, adding extra full stop not intended as an ellipsis), and commas (,) and exclamation mark (!) in place of a full stop were observed in their writing, with the omission of punctuations being the most dominant. This could be because users of SMS have to pass across an intelligible message with minimal use of characters as every character added is of value, since there is a constraint of 160 characters required to send a single SMS. As Richardson and Lenarcic note that, "the puzzle of text messaging is an ongoing challenge to craft minuscule missives, malformed in appearance perhaps, but with cohesive meaning that at times may appear to border on lyrical composition" (2009, p. 843). In other words, if users decide to use all linguistic features appropriately, they may have to pay extra for that.

When calculating the degree of determination coefficient of predictor using Simple Linear Regression, results showed that 64.7% of the variation in punctuation errors was explained by the variation of predictor (how often textese is used), while 35.3% was due to other variables which are extraneous to the study. Thus, there was significance between the preference of the use of SMS language and abbreviation while chatting and their use of punctuations while writing academic work. This matches findings of (Odey, Ndobo, and Endong, 2014; Geertsema, Hyman, and Deventer, 2011).

5.3 Research Question Two:

What forms or variants of textese are most commonly seen in the academic writing of these students? This research also investigated the forms or variants of SMS language and abbreviation that would be seen in their academic work. Findings of these linguistic features of SMS language and abbreviation included clipping, omission of punctuation, omission of capitalisation, excess use of punctuation, accent stylisation, excess use of paragraphs (not in conformation to traditional academic writing), words written all in uppercase, and the use of comma and exclamation in place of the full stop (see section 4.3).

Though some linguistic features of SMS language and abbreviation were found in the academic writing of the students, results showed that not all the features as adopted from (Verheijen 2013, p. 584) were found. Some of the features of textese not found in the works of the students included: phonological abbreviation as in *'skool'* for 'school'; acronyms or initialisms as in *'omg'* for 'oh my God'; clippings as in '*xam'* for 'exam'; single letter homophones as in '*c'* for 'see'; number homophones as in '*2'* for 'to/too'; numeric graphemes as in '*2day'* for 'today'; emoticons as in '☺' for a smile or happy; typographic symbols as in '*x'* for 'kiss'; and repeating letters to show emphasis as in '*greeeaaattt'* for 'great'. It was quite surprising that the students' writing did not contain some of these features, as many teenagers have found creative ways to convey meaning and emphasis with minimal characters (Crystal, 2001; Thurlow, Lengel and Tomic, 2004). For example, none of them made use of numeric graphemes (gr8, 2moro) and initialisms (brb, lol) which is a variant that is common in teen textese (Herring 1996; Werry, 1996). On the other hand, some of the SMS features observed were not surprising to the researcher. For example, the use of excess paragraphs that are not in conformation to standard English paragraphing. Since chatting emulates a face-to-face conversation where participants take turns to respond, messages sent are usually quick and short (Collot and Belmore, 1996; Werry, 1996). Thus, frequent users of SMS language may develop a mannerism to 'hop' to the

next line when they come to the end of a sentence as though they were chatting. This was observed in the essays of 7 of the students, and this could be because they typed their response. Since writing was done using a gadget, the tendency to carryout impulsive mannerism can be inevitable; in this case, the tendency to press the 'send' or 'enter' key after a line of thought is completed. If the students had written the essays with a pen, other factors could have been considered, such as not knowing how to construct a paragraph or not distinguishing between school writing and informal writing.

Another dominant feature of textese that was not surprising was the omission of capitalisation. This is because when users of SMS construct messages, they are not concerned with characters that have no impact on the meaning of their messages. Since writing words all in lowercase does not affect the message being conveyed, they are oftentimes ignored (Tagliamonte and Denis, 2008). The evidence of textese features in the academic writing of students supports the findings of some researchers (Mphahlele and Mashamaite, 2005; Odey, Ndobo, and Endong, 2014; Dansieh, 2011). Since words observed to be written in the lowercase were 'I' and names of cities/countries, it was assumed that the students did not distinguish between formal and informal writing context. This is because 'I' is always written in the uppercase in formal contexts, books, and even autocorrect rewrites it spontaneously during typing. Same applies to names of cities and countries.

5.4 Research Question Three:

Are the students able to differentiate between formal and informal contexts in their writing? To answer the third research question on students' perception of the essay topic, it was discovered that some of the students may have perceived the essay question as an informal one and responded accordingly. This could be attributed to the reason why there were certain

features of SMS language in their writing. For instance, some of them had made use of excess paragraphs that were not in conformity to standard academic English writing. This, as stated earlier could be due to the tendency of pressing the 'send' or 'enter' key after expressing a line of thought, as is spontaneously done during chatting. However, this mannerism cannot entirely be hinged on the essay topic, as the students may probably do the same regardless of the topic given. Perhaps, if the students were asked to write a letter of permission and an essay on their favourite food, the two responses could be compared to understand their perception of topics a bit more. Then a proper comparison could be made, and a proper conclusion drawn. Notwithstanding, the researcher found out that there was a possibility of a Low-Road transfer which suggests that there was an automatic transfer of skills since chatting and the topic given seemed to be informal. Automatic transfer of skills happens when two tasks are closely related to each other (Saloman and Perkins, 1989). This means that if the students had seen the assignment as formal, they probably would have been more careful and applied the High-Road transfer of learning. Also, if they were penalised for such errors during school-based assignments, they probably would have been more conscious of them. Teachers should, therefore, consider drawing the attention of the students to understand the different contexts of writing a bit more. Crystal believes that it is the responsibility of educators to impart knowledge and a sense of responsibility to their students when it comes to the appropriate use of language in the school system. SMS abbreviations are informal and diverge from the standard written language which is formally taught in schools (2004, p. 81).

5.5 Implications

The finding in the study have contributed to the understanding that students' textese use reflect on their academic writing assignment. This study has yielded findings that indicate that there is a rub-off of SMS language on their language use while writing formal work. The findings

concur with and provide both theoretical and practical implication for all who are in the field of education, especially teachers of English language. Some of the implications of the study are as followed:

- It may be difficult to convey intelligible messages when textese is used in academic setting. The reader may have to re-read several times in other to understand the messages the students are trying to convey.
- The fear that it ruins standard academic writing may be founded, especially when punctuations are involved. Students already find it difficult to use punctuations appropriately with or without using textese frequently (Odey, Essoh and Endong, 2014). With the use textese which counts punctuations as an unnecessary character while texting, it would be more difficult to know when and where to use punctuations when writing standard English. The importance of punctuations while writing cannot be overemphasised.
- Though students may not be penalised in school for using textese, in some settings where standard English is required, for example, while writing a letter of employment internationally, a level of formality is expected. Failure to express oneself in proper standard English devoid of textese, may be perceived as lack of patience and organisation, since textese usually involves shortened forms, omissions and rebus writing.

There is little concern about the future of standard written English as Thurlow et al. (2004, p. 124) posits, "Standard English may be the agreed norm for writing a college essay or a business letter, it's by no means the norm when speaking on the street – no one really speaks like they write! The internet is just one of many factors influencing the way language is changing". Language change has always taken place, and as Crystal (2004, p. 81) observes, "the apparent lack of respect for the traditional rules of the written language has horrified some observers,

who see in the development an ominous sign of deterioration in standards. Text messaging is often cited as a particular problem. Children in the future will no longer be able to spell, it is said." Though Crystal argues that textese does not affect standard English, spelling is not the only aspect that should be looked at. There is autocorrect that spontaneously corrects the spelling of words. However, not so much attention is paid on how textese affects other aspects of language such as punctuations and sentence structure. This study observed that these aspects of language was majorly affected.

5.6 Limitations

This study has contributed to the knowledge of how textese affects academic writing. However, there were many limitations observed during the cause of the study, and they are as follows:

- Sample size: The study was carried out on only 17 participants gotten from one class in one school. The sample size is not large enough to draw conclusion for the whole population of secondary school students. As the present study was restricted in terms of sample size, further studies involving a larger sample size with more schools across Norway should be carried out, as just seventeen students are not enough to conclude for the entire secondary school students within the age-grade sampled.
- Age: The target age for the research was 13 to 16 years. However, since the sample was gotten from one class, the expected age was not covered. All the students that participated were between 13 and 14 years old. A study covering a wider age range should be carried out
- Essay topic: The students were given just one essay topic to write on. This was not enough to give answers on how the students perceive topics, and if the topic given has any influence on how they would respond. Therefore, an extra research needs to be conducted, where the students are required to write on two topics (one formal and one

informal). This would help give a better answer to the third research question posed in the study.

- Online survey: This study was not supposed to be carried out online, as they students were meant to have done a handwritten assignment. But due to the covid-19 situation, the survey had to change cause. Because they had to do the assignments using a technological gadget, there is a possibility that they had the assistance of guardians, autocorrect and other software programmes. This could be why there was very little spelling errors seen in their essays. Therefore, another research needs to be carried out in the classroom without helping gadgets.

6 CONCLUSIONS

The present study has investigated the impact of SMS language and abbreviation on the academic writing of students, focusing on their spelling and punctuation habits. The figures have shown that there is a rub-off of textese on the academic work of students, especially by students who use SMS language and abbreviation frequently while chatting. This study also identified the most salient features of this language in their works, and results have shown that there were quite a number of them, with the omission of capital letters, excess use of paragraphs not in conformity to standard academic writing, and omission of punctuations as the most predominant feature. Clipping, accent stylisation, writing a word all in the uppercase, and excess use of punctuation were less dominant.

Towards the end of the 20th century, linguistic and sociologists became interested in the impact computer-mediated communication had on language and society. Baron posited that "computer-mediated communication might affect the existing forms and functions of spoken and written language" (2005, p.139). This debate has been an ongoing one among researchers, and educators with their investigations arriving at a mixed conclusion. One of the initial assumptions in this study was that there would be features of SMS language and abbreviation on the writing of the students. This present study has revealed that there is some influence of textese on the academic writing of students, though not all forms of textese were observed. It is not surprising that omission of punctuations was one of the predominant features found, as its exclusion while chatting does not interfere with the message that is being conveyed. However, according to the Simple Linear Regression test, which measured the degree of prediction on punctuation, it was revealed that 64.7% of punctuation errors observed was due to textese, while 32.5% was due to other factors extraneous to the study. Another striking revelation from the study was that, of all the features of textese seen, clipping was the least dominant with just one

word ‘because’ written as *‘cause’* and not as *‘cuz’* or ‘*cos’,* which are more known variations of the word. This could probably be because the students made use of gadgets, since the survey was carried out online.

A second assumption was that students would impetuously incorporate SMS language during formal writing. As observed, those who preferred to use abbreviations while texting to writing in full, and who often abbreviated when chatting had more features of textese seen in their work. This was verified from the study as the correlation between the preference of textese use, and their essays was observed to be positive. A possible explanation for this is that users of textese may unconsciously carry over their chatting habits to their academic work. It is not surprising as habits are sometimes done impulsively.

A third assumption was that the users of textese are aware of their writing context, and this was found to be partially true. The study showed that, although all of them use textisms while chatting, some of them had very few features of textisms in their works.

Finally, as was stated earlier, the students were tested on their perception of the essay topic to determine whether they would respond to it using the Low-Road / High-Road transfer of learning as proposed by Salomom and Perkings (1989). As can be perceived from the essay topic on which holiday they prefer between the summer holiday and winter holiday, it can be deduced that some of them may have responded using the Low-Road transfer of learning because they may have perceived the topic as an informal one. Therefore, further research needs to be carried out using another essay topic perceived to be formal by traditional English standards. This would help capture the aspect of perception in more comprehensive ways. It would also be interesting to find out if the use of automatic computer word processing programs

affects students' ability to spell on their own, and the possibility of finding a balance between the use of digitalization and traditional classroom methods of teaching.

7 References

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8 Appendix

SMS Language Questionnaire for Secondary School Students

Please fill in the blank spaces and check the appropriate boxes below.

1. How old are you? _____
2. Gender? ☐ Male ☐ Female
3. At what age did you start using a phone _____
4. For how long have you been using a phone? ☐ Less than 4years

   ☐ 4years ☐ 8years ☐ more than 8years
5. Which do you do more? ☐ Call ☐ Text
6. How often do you chat with friends?

   ☐ Several times a day ☐ Once Daily ☐ Occasionally
7. What language(s) do you chat with?

   ☐ Norsk ☐ English ☐ Both
8. How often do you use SMS language, while chatting?

   ☐ Always ☐ Moderately ☐ Sparingly ☐ Never
9. Is your use of abbreviations and SMS language

☐ intentional ☐ unintentional?

10. I would prefer to:

☐ Write words in full while chatting.

☐ Use SMS language while chatting.