

## **An Analysis of Students' Knowledge in Spelling: A Case of a Technical University in Ghana**

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### **Abstract**

High proficiency level in spelling is considered to be an important literacy skill writers need to be able to establish shared meaning with their readers. However, the Applied Linguistic literature reveals that spelling errors dominantly plague the essays of students who speak English as Second Language (ESL). In lieu with this, this study sheds light on students' knowledge in spelling in a Technical University in Ghana. The participants for the study involve 275 students who were randomly selected from three academic levels. The random sampling procedure was further used by the researchers to select 30 English words out of 50 words that have been compiled by the Communicative Skills Unit as the most consistent misspelled words in the written English essays of students of the Technical University over a period of four years. The respondents were further tested on how well they could spell those words. The findings confirm three main types of spelling errors: "insertion errors", "substitution errors" and "transposition errors". The findings further reveal that the students' inability to correctly spell most of the words that were dictated to them is a result of their unfamiliarity with the words, their inability to account for the right pronunciation associated with those words that were dictated to them as well as the failure of students to edit their work after the spelling exercise. It is also confirmed that the academic levels of the students do not have a significant influence on their performance in the knowledge of spelling.

### **Keywords**

Spelling errors, Transposition errors, Insertion errors, Substitution errors

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## Introduction

The emergence and the use of English as a medium of instruction in the Ghanaian educational scene dates back to the colonization of Gold Coast, now Ghana (Sackey, 1997). Since then, English has assumed an influential position within the Ghanaian landscape for conducting business and as a medium of instruction at almost all the levels of education in Ghana. For example, in the education system in Ghana, with the exception of lower primary, English is the most used medium of communication and instruction across all levels. It is also considered as one of the core subjects that students must obtain a credit pass in order to progress from Junior High School (JHS) to Senior High School (SHS) and at the tertiary levels, specifically the universities, competence in English is regarded as a skill that students need in order to be able to successfully go through their respective programmes. It is therefore evident that English, which is considered as a second language within the Ghanaian context, determines largely the success of Ghanaian learners. That is, it is the foundation of academic ability of students (Lyon, 2002). Therefore, the failure of students to acquire literacy in English hinders their progress throughout individual’s years of schooling, especially at the university level where students have to go through a lot of writing tasks before they graduate (Elbro & Scarborough, 2004).

However, learning English as L2 is considered as a daunting task and as such, most scholars (Afful, 2007; Amoakohene, 2017a) advocate that much space and time should be given to the teaching and learning of English language at various levels of the academic ladder. Figueredo (2006) on the other hand, posits that, the acquisition of the rules of usage of English among English Second Language learners differs from first language learners because they (L2 learners) use the knowledge of their first language in learning to read, write, and spell in the second language. Brown (2000) views these errors as a byproduct of progress in the learning process. He further stresses that in order to master the English language, learners have to be adequately exposed to all of the four basic language skills - listening, speaking, reading and writing. However, of all the four language skills, writing has been considered to be a very complex process in that it is a skill that is not acquired by birth but rather, it is learnt (Amoakohene, 2017a). It is therefore not surprising that most non-native speakers of English find it difficult to demonstrate the craft in composing meaningful and error free texts.

James (1988) argues that errors in writing such as tenses, the use of wrong prepositions and weak vocabulary are the most common and frequent type of errors that are dominant in the written texts of both ESL/EFL learners. In Ghana, one of the most common errors that plague the essays of students at all levels of education is spelling errors (Amable, 1990). Hildreth (1962:2) argues that “spelling is a sort of draft horse of written expression without which the load of work in writing cannot be done easily”. Similarly, Smedley (1983) believes that spelling errors negatively affect the clarity of the written message, and consequently interfere with communication between the writer and the reader. Other scholars contend that spelling and reading are closely related and as such, bad spellers are usually considered to be bad readers (Koda, 2005; Randall, 2007; Fender, 2008).

An analysis of the Basic Education Certificate Examination Chief Examiners report by Owusu-Ansah (2005) in three successive years (1993, 2001, 2003) highlights spelling errors as a major problem in written grammar of students. Per this finding, Owusu-Ansah (2005) indicates that students score low marks in English as a result of wrong spelling of words that characterize their essays. Beside this, the Chief Examiner’s Report on the 2008 Basic Education Certificate Examination (B.E.C.E.) also highlights poor spelling as a major

challenge of students' written essays, which to a large extent, impedes comprehension of essays written by these students. For example, when students write "other" instead of "order", "does" instead of "thus" and "plain" instead of "plane", it affects and distorts the message they intend to establish in their written texts and as such, affects the final scores that they get in the essays they write. To add to this argument, Amable (1990) also opines from her research findings that spelling mistakes are one contributing factors to the falling standards of English in Ghana. It is therefore not surprising that Asante (2007), an Educationist in a feature in "Daily Graphic," – a popular newspapers in Ghana - on the topic: *Time to stop and think about education* reiterates the need for the educational sector to pay attention to the English Language since without its mastery, success in other subjects would be impossible. One major aspect of English that needs to be given much attention is linked to helping students gain the mastery in spelling.

Over the years, most scholars have enumerated and emphasized the importance of spelling to the literacy of students (Ehri, 2000; Ritchey, 2008; Robinson, 1990; Katzir, Kennedy, Kim, Lovett, Morris, & Wolf, 2006; Moats, 2006). This is because, poor spelling inhibits students in several ways. As evident in the Applied Linguistics literature, spelling is considered as a unique and important sub-writing skill in that a written piece of work that has series of spelling errors make it difficult for readers to decode what the writer of the text intends to communicate to them. That is, spelling errors in a text can deny both the writer and the receiver to gain shared meaning and to a large extent, distort the entire communication process (A-Shabhi, Rashid & Abdullah, 2018). This means that the ability to spell words correctly, is of great importance to language learners in that it projects their mastery of language, and good spelling creates a good impression about students' potential to perform well in their various disciplines of study. Another benefit of mastery in spelling by students is linked to the fact that it gives language learners self-concept, status and knowledge that enable them to communicate adequately in writing (Peters, 2013). The spelling competence of students is not only an indicator that they can write well but scholars such as Moats (2006), Ritchey (2008), and Mesmeh (2012) establish a significant correlation between competency in spelling and effective reading comprehension. That is, these scholars are of the view that students' ability to read fluently and comprehend whatever they read lies in their ability to spell words correctly and use the right reading skills.

In the world of work, students' knowledge in spelling plays a critical role in their success in getting a job in the labor market, a condition that makes students knowledge in spelling an integral part of the writing process especially at the tertiary level and at the Technical Universities to be specific. That is, students' inability to spell words correctly in various documents they submit for employment after graduating from school, has become a great concern among employers of late (Martin-Lacroux & Lacroux, 2017). In other words, spelling skills are considered to be integral aspect of written communication skills and as such, graduates inability to demonstrate high level of competence as far as this writing skill is concerned is an important issue for many employers since they (employers) tend to agree that these potential employees might not have adequately mastered basic writing skills (Barrington, Wright, & Casner-Lotto, 2006; Stevens, 2006). This shows that training students to acquire knowledge in spelling, specifically at the university level, should not be underestimated since it does not only help students write meaningful texts, but it goes beyond that to assist them to be good competitors in the world of work.

Hildreth (1962) argues that "spelling is a sort of draft horse of written expression without which the load of work in writing cannot be done easily" (p. 2). Similarly, Smedley (1983)

believes that spelling errors negatively affect the clarity of the written message, and consequently interfere with communication between the writer and the reader. Other scholars contend that spelling and reading are closely related and as such, bad spellers are usually considered to be bad readers (Koda, 2005; Randall, 2007; Fender, 2008).

### **1.1. Identification of the Gap in the Literature**

Writing has widely being considered as the most laborious task of all the other three writing skills – speaking, reading and listening. The difficulty that students have in writing has been related to their inability to maintain cohesion and coherent in their texts, avoid ambiguity in their essays, write essays with good preposition usage as well as show mastery in the use of punctuation marks. Aside these, one other aspect of spelling that is considered to be a huge source of challenge to students, especially ESL students, is in the area of spelling words correctly. The challenges that students have in spelling have led to an upsurge in spelling research in the past years due to the importance spelling has on literacy acquisition (Conrad, 2008; Kwong & Varnhagen, 2005; Treiman & Bourassa, 2000). Within the Ghanaian context, the situation is not different as scholars like Amable (1990), Edu-Buandoh (1996), Owusu-Ansah (2005), Twum (2011) and Dadzie & Bosiwah (2015) have all explored challenges that students within the Ghanaian context face as far as spelling of words in English are concerned. The general findings that these scholars project as the cause of these writing challenges is in line with students’ poor reading culture as well as students’ inability to correctly associate the right sounds to the corresponding words that they are tasked to spell. A critical analysis of these studies within the Ghanaian context reveal that research works on students writing, especially within the area of spelling, have focused on students the Senior High School level (Edu-Buandoh, 1996), non-Technical University setting (Antwi, 2006) and at the Junior High School Level (Dadzie & Bosiwah, 2015; Twum, 2011). Surprisingly none of these studies made use of Cook’s (1999) typology as its analytical framework. Thus, the literature reveals that despite the existence of scholarly works on spelling at the various levels of the academic ladder, the Technical Universities, within the Ghanaian context, have not been given much attention.

The purpose of this study therefore is to investigate students of a Technical University’s knowledge in spelling and further adopts Cook’s (1999) classification of errors in line with spelling to determine the type of spelling errors that normally occur in the writings of these Technical University students. Cook’s (1999) classification of errors categorizes errors into four main types which include omission, substitution, insertion, and transposition errors and this classification is seen as the most adopted model in analyzing spelling errors basically because of its comprehensive nature. From the point of view of Kasuran (2017), insertion errors occur when one additional letter is included in the spellings of words and one of the most common insertions as posited by Kasuran (2017) are known as consonant doublings, which include errors such as <gg> in \*aggreement, <ff> in \*proffessional and <ll> as in \*allready or \*carefull. Cook (1997) projects that other forms of insertion errors normally committed by L2 speakers include the insertion of <e> after <i> (as in <ie>) for sounds corresponding to /aɪ/ in misspellings such as \*priemary or \*dierect.

Omission errors on the other hand is a type of error that occurs when one letter in a sequence within a word is left out. According to Cook (1997), the most common letter omitted by L2 users is <n> when it is used within consonant clusters, such as with the misspelling \*desigs instead of design. Other instances of omission errors from Cook’s (1997: 483-484) perspective include the omission of consonants consonant in a pair of consonants, such as the omission of <c> from the consonant pairs <cq> in misspellings like \*aquisition, or the <h>

from <ch> or <gh> in misspellings such as \*scholarship or \*thought. Another common omission by L2 users is the silent word-final <e>, in misspellings such as \*morphem and \*softwar, as well as when it precedes <ly> in \*unfortunatly or \*completely.

Substitution errors on the other hand, is noted to be divided into two types which include either substitutions of single letters, or as grapheme substitutions of multiple related changes. For example, one may write \*thort instead of “thought” as well as substituting <s>, <c>, <z> and <t>, resulting in misspellings such as \*immence, \*influencial or \*amasing (Cook, 1997: 482). Cook (1999) defines transposition errors as the type of spelling errors of words where two consecutive letters change place. Cook (1997) further posits that one of the most common transposition errors occur with the letter pairs <e> and <i>, producing errors such as \*concieved, \*acheived or \*foreigner (p. 484).

Given that knowledge on spelling errors of Technical University students in Ghana has remained patchy and anecdotal, this study is essential as its findings will provide useful knowledge on the state of spellings among Technical University students in Ghana. It is anticipated that results of the study will have useful practical implications as policies and strategies are implemented to improve the spellings of students.

## **1. Literature Review**

From the Applied Linguistic literature, it has been noticed that the word “spelling” lacks unanimous conceptual clarification. That is, most scholars have defined this term from different points of view. For instance, Hornby (2000) defines spelling as the act of forming words correctly from individual letters. Hodges (1984) also conceptualizes spelling as a process of converting oral language to visual form by placing graphic symbols on some writing surface. Similar to the definition of Hodges (1984), Wolff (1958) states that spelling is an act of seeing or hearing accurately what may be written or spoken, and translating that visual or aural image into motor activity. That is, spelling as “the ability to produce words, orally or in a written format, by positioning letters in a precise order” (Nahari and Alfadda, 2016, p.3).

Pijper (2003) is also of the view that spelling involves the integration of several skills which include knowledge of phonological representation, grammatical and semantic knowledge, as well as the formulation of analogies with words in visual memory. Young (2000) on the other hand, gives a more comprehensive pedagogy of spelling to include phonetics, syllabication, prefixes, suffixes, rules for plurals and possessive as well as adding suffixes, learning to pronounce words correctly to spell correctly and learning the basic sight words. That is, spelling errors occur if there are series of letters that represents no correctly spelled word of the same language (such as "liek" for "like") or a correct spelling of another word (Al-Jarf, 2008; Mifflin, 2007).

### **1.1. Types of Spelling Errors**

Several categorization of spelling errors exist in the literature. Ramadan (1986) identifies morphemic, intra-morphemic, and splits as three main categories of spelling errors from a written composition of 200 students. Ramadan (1986) further classifies the morphemic errors into five types: inflection errors, omissions errors, phonetic errors, residue, and derivation errors. The second group of errors, intra-morphemic errors, is divided into four types: articulation errors, syllable omission or reduction, lexical errors, and ambiguous

correspondence errors. The third category, splits, contains two subcategories: compounds and pseudo-compound.

Al-Bakri (1998) on the other hand identifies seven types of errors after he investigated spelling errors of English majors in the Yarmouk University in Jordan. These errors as posited by Al-Bakri include substitution, insertion, omission, segmentation, pronunciation, unclassified errors and miscellaneous. Based on an analysis of errors in the writing of learners of English from a range of countries, Cook (1999) also concludes that English spelling errors can be classified into four main types of spelling errors: omission, substitution, transposition and insertion errors. This classification has widely been used in the literature as a framework to analyze spellings challenges of students from different geographical settings and at different levels of the academic ladder. Some studies that have employed Cook’s (1999) model include Allaith (2009), Subhi & Nabeel (2015), Golshan & Reigani (2015) and Othman (2018). A study of spelling errors of 43 EFL undergraduate Jordanian students writing by Al-zuoud and Kabilan (2013) confirm similar patterns of errors in line with Cook’s (1999) classification of errors and these include omission, substitution, insertion, and transposition errors. Thus, the findings reveal that majority of the students’ spelling challenges are linked to substitution and omission errors. Closely related to the above studies, Al- Karaki (2005) in his exploration of spelling errors made by students of Alkarak Directorate of Education, identifies six types of spelling in the students written essays and these spelling errors include addition, omission, substitution, segmentation, disordering, and miscellaneous. Coupled with this, most spelling errors identified in the students learning are related to omission, substitution and addition errors. The findings further confirm that the higher the academic level of students, the fewer the spelling errors they commit.

Al-Jabri (2006) also highlights omission, substitution, transposition and insertion errors as the spelling error category that plague the written essays of 114 Omani fifth-grade students in two rural schools. He further stresses that the omission and substitution errors are more dominant in the writings of the focused group for the study whilst transposition and insertion errors were less frequent. Also, Alhaisoni et al. (2015) findings on spelling errors on 122 EFL undergraduate students at the University of Ha’il in Saudi Arabia confirm wrong use of vowels and pronunciation as the most dominant forms of errors in the essays of students. The findings indicate that spelling errors occur as a result of anomalies existing in L2 as well as L1 interference.

Dadzie & Bosiwah (2015), accounts for six different types of errors in the essays of selected Junior High School students in the Cape Coast Metropolis of Ghana by analyzing the essays of sixty students from selected Junior High schools, Dadzie & Bosiwah (2015) spotlight omission, addition, substitution, inversion, pronunciation and miscellaneous as the dominant errors that plague the essays of the selected students. However, they highlight that the frequency and the types of errors vary across the schools that were selected for their study.

## **1.2. Causes of Spelling Errors**

Results of empirical studies regarding misspelling of words among students reveal several causes. A stream of studies in the literature report irregularities of the English spelling system as the main cause of spelling errors (Smith, 1973; Bahloul, 2007; Al-Hassan, 2011; Jayousi, 2011). Smith (1973) argues that in addition to the 26 letters of the alphabets, there are additional 52 main English spelling units which double the size of the alphabets and as such, learners must get familiar with them in order to become effective writers. Other irregularities

such as silent letters contained in English words (*debt*-[det], *enough* -[ɪnʌf], *light*-[laɪt], *tongue* -[tʌŋ], and *foreign*-[fɔːrən]) and also alternative spelling in terms of the British and American (*theatre*-*theater* and *color*-*colour*) cause learners of English to find English spelling a cumbersome learning process.

Another cause that is indicated in the literature is linked to linguistic differences between English and learners' first languages (Brown 2000; Swan & Smith, 2001; Saville-Troike, 2006; Corder, 1993). Tonga et al. (2009) argue that these causes are due to the differences in orthography and morphology. With reference to orthographical depth, several scholars espouse that children whose first language is highly transparent, like that of the numerous Ghanaian languages, may use the sound-to-spelling strategy to spell English words, which may result in spelling errors (Cronnell, 1985; Durgunoglu et al., 2002; James, Scholfield, Garrett, & Griffiths, 1993; Luelsdorff, 1986). For example, spelling error analysis by Cronnell (1985) on grade 3 and 6 Spanish speaking children reveals that the focused group for the research predominantly make use of transparent spelling of Spanish in spelling English words. Some of the students spell *clean* as *clin*, *rock* as *rack*, *blouse* as *blaus*, and *once* as *ones*. Similar to the above study, Durgunoglu et al. (2002) has explored spelling errors of grade 4 Spanish children transitioned from a Spanish-English bilingual education program and the findings reveal that most of the students use spelling-sound correspondences systematically and spell the words as they hear them and evidences from the data include instances of wrong spelling such as, *reel* (*real*), *wich* (*witch*), *favret* (*favourite*). This confirms the views of scholars within the Ghanaian context like Amable (1990), Twum (2011), Dadzie & Bosiwah (2015) that one of the main challenges of students in spelling words correctly is their inability to associate the right spelling-sound correspondences to English words that they spell.

Closely related to the above mentioned causes, Brown (2000); Saville-Troike (2006) highlight the effect that the mother tongue may have on L2 acquisition. That is, most L2 learners normally transfer the rules governing the spelling of words of their respective L1 to the spelling of the L2 words. Swan and Smith (2001) believe that where the mother tongue has no equivalent form, the linguistic feature found in the target language learning is difficult and vice versa. In a study of ALEs in Saudi Arabia, Bahloul (2007) attributes the errors that were identified to three main causes: intralingual, developmental, and interlingual. Intralingual errors are caused by the spelling system of the target language and they include monographicization, graphemic unification, and phoneme/grapheme matching. Developmental errors on the other hand, are as a result of learners' developmental stages and it comprises metathesis, cluster simplification, epenthesis syllable simplification and syllable truncation and assimilation. The final cause, intralingual errors, are caused by the interference of the mother tongue. These comprised of four types of errors: consonantal replacement, vocalic transfer, nativization, and epenthesis.

## **2. Research Questions**

The study will be guided by these research questions.

1. What are the type of errors that plague the spelling of students at the Ho Technical University?
2. What are the frequencies of these errors as evident in the spelling of students at the Ho Technical University?
3. What causes these students to commit these categories of errors in their spelling of words?

### 3. Methods

The work investigates students of the Ho Technical University’s knowledge in spelling of English words. The researchers employed the qualitative research design as the research paradigm for the study. This stems from the fact that the analysis of the data is skewed towards the use of non-numerical data though there were few instances where the study makes use of frequency counts to aid the analysis of the data. The qualitative research design is deemed appropriate because the researchers aimed at profiling the nature of spelling errors in the institution under study (Punch, 2005; Jackson, 2009; Saunders *et al.*, 2012). Total samples of 275 students were selected by using the convenience sampling technique which is a nonprobability sampling procedure where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time and the willingness to participate are included for the purpose of the study (Dornyei, 2007). This approach helped the researchers to select the most accessible subjects that were studied and it is less costly in terms of time and effort (Oisín, 2007; Marshall, 1996). In order to get the needed data for the study, the students were grouped into three according to their academic year or level of education and they were given a spelling test that consisted of thirty sampled English words. These students were grouped according to their year of education so as to enable the researchers effectively compare the differences and similarities that exist in the spelling errors that the students committed in the spelling exercise. Aside these, the focus group for the study were made up of students from all the three levels (first, second and third year students) at the selected Technical University because, the writers aimed at projecting a general picture of students’ knowledge in spelling at the selected Technical University. That is, the researchers did not want to limit their study to only one level but rather wanted to involve students from across the three levels of the selected Technical University. This, to a large extent, makes the findings of the study a reflection of the performance of all students of the selected Technical University in the spelling of English words.

This test comprised three main stages. The first stage required students to listen attentively to the thirty words that were used for the study as well as their (words) related meanings without writing and this took exactly 15 minutes. In the second stage of the test, the thirty words were spoken to the respondents for them to write these words down and this stage of the data collection process also took thirty minutes. Finally, the third stage involved going over the words that were dictated to the students for them to make corrections of any word they thought they had misspelled. To ensure the right pronunciation of the words that were dictated to the students, the researchers employed a specialist in phonetics and phonology to dictate the words to the respondents in both British and American English since either of these spellings was considered as appropriate for the spelling exercise. As people who are trained to work in various firms across the world, students of Technical universities should not only know the right spelling of words as used in context but the researchers are of the view that these students should also have the competence to match the right English words to their respective pronunciation. This would not only help the students in their various areas of work after school but also enhance their classroom work since most of the notes these students take in class are dictated to them. These reasons therefore necessitated the need for the spelling exercise that was used in this study to evaluate students’ competence in spelling. Thus, these reasons called for the reason why words were selected separately for listening and writing, rather than in the form of a text which will give more information on the way listening comprehension affects spelling, and further on reading comprehension in the process of error correction. Data collected on the spelling were marked and those with errors were classified



based on Cook's (1999) classification procedure. Frequencies and percentages were used to summarize demographic information of respondents and explain the nature of the spelling errors based on Cook's (1999) typology which has effectively been used to analysed spelling errors of students from different geographical and academic backgrounds. Coupled with the aforementioned stages, the researchers further conducted an interview after the text to elicit the rationale for the wrong spelling of most of the words that were used for the spelling test.

#### **4. Results and Discussions**

Table 1, as indicated in the appendix, gives a clear picture of the percentage of words that were spelled wrongly as against the rate at which those words were spelled correctly by the students. Thus, Table 1 shows the rate at which a word was spelled wrongly or correctly across the three year groups of the Technical University students who formed part of the data set. These misspelled words confirmed Cook's (1999) classification of errors which include insertion errors, omission errors, transposition errors and substitution errors

Table 1, as evident in the appendix, reports in percentage terms the words that are spelled out correctly and incorrectly by the research participants. The findings of the study reveal that the word "citizen" has the highest correct spelling rate (97.89%) for the first year students followed by "management" (89.44%) and program(me) (87.32%). With regard to the spelling of the word "program (me)", the analysis shows that students typically made use of the American spelling (program) as against the British spelling (programme). After further discussions with the students for their choice of the American spelling over the British spelling, they highlighted that the American spelling version of words in English are very simple and they dominate most of the text books they read as well as other media platforms that they visit to search for information. However, they confirmed to the researchers that though the American brand of English makes spelling of words easy for them, they are forced to always use the British English in their writing because it is the dominant medium that their lecturers use to teach them in their various disciplines of studies.

On the other hand, the top five words that are spelled wrongly by the first year students in descending order include "conscientious" (97.89 %), "cantankerous" (95.77%), "cue" (92.96%), "frivolous" (92.25%) and "quay" (90.85%). When the researchers elicited the rationale for the wrong spelling rate of most of the words, it was confirmed from the respondents that they could not provide the right spelling of most of the words because it was their first time of hearing those words. With regard to the aforementioned five words with the highest rate of wrong spelling, 99 (69.7%) first year students confirmed that they could not spell those words correctly because that was their first time of hearing those words whilst 43 (43%) of the first year students confirmed their inability to spell most of the words especially the top five misspelled words was as a result of their ignorance of the right pronunciations of those words.

As far as the second year students are concerned, the analysis reveals that 67% (20 out of 30) words had above 60% correct spelling rate. Words like "citizen" (96.08%), "committee" (98.04%), "opaque" (96.08%), "management" (98.04%), "judgment" (100%) and "aggravate" (96.08) were noted to be the top six words that recorded the highest correct spelling rate. An interview with the students after the test revealed that they were able spell these words correctly because they were familiar with them. 88.2% of the students confirmed that their familiarity with those words led to their ability to spell the words correctly. Other students (9.8%) also confirmed that they were able to spell most of the words correctly because the

pronunciation of those words corresponds exactly to their spelling. However, three words: “quay”, “conscientious”, and “ephemeral” could not be spelt by any of the students in the second year and as such its misspelt rate was 100%. After further interrogations with the students on the reasons for their inability to spell the aforementioned three words correctly, the researchers confirmed that none of them could spell the words correctly mainly because it was their first time of hearing those words and as such, they were not familiar with the right spelling of those words that were dictated to them.

For the third year students, the findings reveal that 15 (50%) of the 30 words that were dictated to them have below 50% correct rate of spelling whilst 15 (50%) of the words have above 50% correct rate of spelling. The findings further reveal that the top five words that were spelt wrongly by the research participants in descending order are “conscientious” (100%), “cantankerous” (100%), “cue” (98.78%), “dogma” (98.78%) “frivolous” (95.12%) and “ephemeral” (95.12%). Like the second year students, the third year students’ inability to spell most of the words correctly is as a result of their ignorance with the right pronunciations of those words. “Management” and “program(me)” had correct spelling rate of 96.34% and 92.68% respectively. Similarly, “citizen” (82.93%) “accommodation” (85.37%) and “congratulation” (84.15%) have a good score of correct spelling as a result of students’ familiarity with these words. The researchers confirmed with most of the students (80%) after the test was marked that, the students’ ability to correctly spell those words were as a result of their familiarity with those words. Thus, those words were predominant in the lecture notes and text books of the students and as such they were highly familiar with the words.

**Table 2: Types of Errors Identified in the data set**

Type of Error	Year 1	Year 2	Year 3
<b>Omission</b>	810	264	512
<b>Substitution</b>	125	6	209
<b>Insertion</b>	805	214	212
<b>Transposition</b>	----	49	31

Table 2 presents spelling errors analyzed according to the four categories suggested by Cook (1999). That is, from the analysis, it is confirmed that year 1 students committed more omission errors (810 times) followed by year 3 students (512 times) whilst year 2 students have the least omission errors (264 times). With regard to insertion errors, the analysis confirms that year 1 students committed more errors (805 instances), followed by year 2 students (214 instances). The analysis further reveals that year 3 students committed more substitution errors (209 instances) followed by year 1 students with 125 instances of substitution errors. As evident in Table 2, it can be deduced that year 2 students have the least substitution errors (6 instances). Regarding transposition errors, year 1 had none and year 2 had the highest of 49 whilst the year three students have 31 instances of transposition errors. Examples of these types of errors in the data are given in section 4.3. Surprisingly, the levels of the students who were examined did not significantly have an effect on how well they spelled most of the English words that they were tasked to spell. This is because, the data shows instances where the year three students committed more substitution errors than the first and second year students while some instances revealed year one students committing more omission errors than the year two and three students. From Table 2, it can also be noticed that there were no instance where the first year students committed transposition errors unlike the year 2 and three students who recorded 49 and 31 instances of transposition errors respectively.

#### 4.1. Reasons for the Respondents Inability to Spell most of the Words Correctly

This sub-section of the analysis projects the rationale behind students inability to correctly spell most of the words that were dictated to them. That is, after marking the spelling exercise that was given to the students, the researchers further organized an interview for the students to determine the reason behind their inability to spell most of the words correctly. The researchers made a conscious effort to interview all the 275 students across the three academic levels. An analysis of the interviews with the 275 respondents confirms that their inability to correctly spell most of the words that were dictated to them is linked to three main issues: students unfamiliarity with the words that were dictated to them, inability of the students to account for the right pronunciation associated to the words that were dictated to them as well as the failure of students to edit their work after the spelling exercise. Thus, on 138 instances (50.2%), the students attested to the fact that their inability to spell most of the words correctly were related to their unfamiliarity with the words that were dictated to them. This means that, the first time they heard about those words were the day they were tasked to spell them. According to the respondents, words like *queue*, *quay*, *conscientious*, *frivolous* and *cantankerous* were new to them and as such did not know the correct spelling of those words. This situation highlights the poor reading culture of the respondents, a situation that limits their knowledge in spelling most of the words in the English Language.

Across the three levels, the second most dominant reason that led to the respondents inability to correctly spell most of the words that were dictated to them is linked to their failure to edit their work after the spelling exercise. This situation shows that the post writing stage, a mandatory and important stage in the writing process, is not considered as a serious aspect of the writing process by the students. There are 97(35.3%) instances where students admitted that their failure to spell most of the words correctly is as result of not editing the words they were tasked to spell in the writing exercise. This might probably be related to the fact that most of the students are either not aware or feel lazy to go through the post writing stage so as to correct some minor errors in any writing task they may be compelled to do. It is not surprising that wrong spellings such as *pretentious* (pretentious), *fleetin* (fleeting), *solitud* (solitude), *cocious* (conscious) and *frivolos* (frivolous) are identified in the spelling exercise of the students. For instance, with regard to the spelling of the word *pretentious*, there was an omission of the letter “n” after the letter “e” in the second syllable of the word *pretentious*. Also, there is an omission of the letter “g” which should have appeared before the letter “n” in *fleeting* whereas the letter “e” which is supposed to have come after the letter “d” in *solitude* is also omitted. It is believed that if students should have taken time to thoroughly edit their work, such basic errors could have been rectified. This therefore suggests the need for language teachers, especially Communicative Skills lecturers at the Ho Technical University, to stress the importance of editing and proofreading as important aspects of the writing process as well as inculcate in students the habit of editing any text that they write.

The third reason that is noted to have caused students failure to spell most of the words accurately is identified to be students’ inability to associate the right pronunciation to the words that were dictated to them. This suggests that one challenge that most of the students at the Ho Technical University face as far as the English Language is concerned is to correctly give the right pronunciation to most of the words in the English Language. This challenge therefore accounted for the wrong spelling of most of the words that were dictated to the students. An analysis of the interview data proves that there are 97 (14.5%) instances where students confirmed to the researchers that their inability to spell most of the words that were

dictated to them is linked to the fact that they did not know the right pronunciation of some of the words that were dictated to them. For example, some of the students confirmed that they did not know the pronunciation of words like *queue*, *quay*, *cue*, *conscientious* and *ephemeral* and as such they could not provide the right spelling for these words. A word like *queue* was in some instances spelled as “qeeu” and “queue” whilst *cue* was predominantly spelt as “qay”.

## 4.2. Discussion

The omission errors occurring in the work of the Ho Technical University students is noted to be highly linked to their attempt to manipulate and associate a range of vowels and consonants combinations to form words; participants’ attempt to construct a word based on their knowledge of grapheme-phoneme relationships; the high frequency of eliminating some phonemes like /e/ s/ n /i:/ m/ and others; and omission errors being linked to the concept of interlingualism. These reflect the findings of Alhaisoni, Al-Zuoud & Gaudel (2015) on omissions in orthography. Such errors like *comtiee*, [comit]; *aventure*, [advent]; *pretetios*, [pretend] are described as errors of invented spelling (Gentry, 2000). They expose the individual's knowledge of the base or root word but there is lack of knowledge by the individual to correctly associate the vowels and consonants combinations to form the target words.

Based on the knowledge of grapheme-phoneme relations, the students omit some of the letters from the spelling due to the silent nature of that letter in pronunciation [*solitud*, *conscencious*, *pretentius*, *frivolos*] making it difficult for the students to add it in writing. For example, a word like *solitud* should have ended with the letter *e* as *solitude* whilst the letter *u* should have been introduced before the letter *s* in *frivolos*. These omissions show a lapse in the students' spelling abilities which might have accrued over the years in the education process.

Again, there was the high incidence of not adding some letters *e*, *s*, *n*, *m*, *l* and *g* to target words [e.g. *feeting*, *fletin*, *fleetin*, *phemeral*, *ephmeral*, *ephemera*, *cocious*, *consious*, *conciuous*]. This may be attributed to carelessness or confusion (see page 12). Finally, the omission errors could be caused by inter-lingual challenges as students try to impose L1 pronunciations on L2 orthography. This confirms the findings of Dadzie and Bosiwah (2015) that most errors, especially omission errors that most students commit in their written essays are as a result of L1 interference, transfer and ignorance on the side of the students.

### **Insertion Errors**

Nyamasyo (1994) describes errors of insertion as the addition of redundant letters to the word as either an act of performance or competence. This form of error was committed by most of the students and as such got most of the words spelled wrongly. That is, in spelling most of the words that comprised the text items, most of the students added redundant letters to the base word and as such led to most of the misspelled words in the data. For example, a word like *pacify* is misspelled in the data as *paccify*, *parcify*, and *parcifey* whilst *dogma* is misspelled as *dogmah*, *dogmar*, *dogmaa*, *dorgmar*, *dorgmah*. On the other hand, most of the students also spell the word *quay* as *quaey*, *quaye*, *quaey*, *quaay*. In all these instances, it could be realized that students insert letters that are not needed in the spelling of most of the words that were dictated to them. The cause could be attributed to students’ inability to make the distinction between the long and short vowels /æ/a: /ɔ: /ɔ/ in the articulation of the sounds as appears to be the case in the use of some consonants /h/k/r/. According to Chomsky (1965), such mistakes may result due to lack of attention or confusion. The contention could be that,

as second language learners of English, it could be competence related since they do not have adequate grasp of the English language judging from the number of insertion errors.

### ***Substitution errors***

Substitution errors are as a result of mispronunciation of the target word before spelling. It may be as a result of the transference of first language features into the target language or the inability to identify the right sounds and this affects the performance in the orthography, confusion, and carelessness which result to students substituting some letters for others in their quest to spell those words and students of the Ho Technical University are not exception to this source of error. For example, the data for the study reveals that the letter /k/ has been substituted for /c/ in *kantangurous*; /g/ used for /k/ in the spelling of the word *cantankerous*. This applies to other words like *pretentious* in which the 'pre' has been spelt as 'prin' (*printentious*); similarly, in *pretentious*, the letter /r/ has been used instead of the letter /n/. Other examples that can be cited from the data are the substitution of the letter /u/ for /o/ in *frivolous*; /eat/ for the /ee/ in *fleatting*; /o,c,c/ in *concanaros* as well as other omissions and insertions reveal a state of confusion in the mind of the students in the writing of these words.

### ***Transposition errors***

Transposition errors are the least of mistakes made from the data collected and instances of this kind of error could be due to carelessness and confusion on the part of the learners. With regard to the issue of confusion as a cause of most of the transposition errors, the analysis confirms that in their quest to spell the words that were dictated to them, students at some point were confused with the right number and order of syllables that constitute some of the words they were dictated to them. As a result of this, the students either omit a syllable or interchange the right order of the syllables that make up a given word. This confirms Staden (2010) view that for students to gain mastery in spelling, they should be able to know the internal structures that make up the various words in the English Language. That is, it involves their ability to blend, segment, and manipulate syllables and sounds in words (Kelman & Apel, 2004).

For instance, with a word like “magnanimous”, most of the students changed the right order at which the syllables in the word “magnanimous” should have appeared by writing it as “magninamous” where the syllable “na” should have preceded the syllable “ni” instead of it(na) coming before the syllable “ni”. The aspect of carelessness that led to most of the transposition errors are linked to students failure to take huge responsibility to edit their work after they completed the spelling task despite the fact that they were given some time to edit their work before submitting to the researchers. This source of errors was confirmed by most of the students who objectively reported to the researchers in an interview after the spelling test that they would have spelled most of the words correctly if they had edited their work thoroughly.

As evident in the Applied Linguistic literature, transposition errors occur as a result of the wrong positioning of letters in the target word. This type of error was made by the second and third year students but none of the first year students committed any error in spelling that is linked to transposition error. It is evident in the data that there are 49 instances of transposition errors from the spelling of the 30 words by the second year students whilst 31 instances of transposition errors were detected in the spelling test of the third year students. Typical instances of these source of errors in the data include the spelling of words like

*pretentious* as *pretentiuous*, *magnanimous* as *magninamous*, *ephemeral* as *epehmeral*, *gorgeous* as *gorgeuous* and *elaborate* as *elaboraet*. For instance, in the spelling of words like *pretentiuous*, the students transpose the letters *u* and *s* and as a matter of fact make the spelling of the word wrong. That is, the letter *o* should have appeared before the letter *u* as in *pretentious* but not *pretentiuous*.

## 5. Limitation and suggestion for future studies

Spelling errors recorded in this study supports Error and Contrastive Analysts claim that, learners have varied first languages so the challenges with English spelling would probably be many. However, although the data was collected from a heterogeneous ethnic group of students, much cannot be said about how their various L1 backgrounds affect their spelling competences as it was not the focus this research work. It is suggested that this could be a topic for future research. Aside this, the findings of the study is only limited to the students of the Ho Technical University and as such a clear description of the spelling challenges of student in other public universities have not been catered for in this work.

## Conclusion

From the analysis, it is evident that out of the thirty words that formed the basis of the spelling exercise, words like *citizen*, *passionate*, *accommodation*, *congratulations*, *management*, *judgement*, *elaborate*, and *correct* have the highest frequency of correct spelling since they recorded a frequency of 60 and above correct rate of spelling across the three academic levels of students who were examined. However, words like *cantankerous*, *ephemeral*, *magnanimous*, *conscientious*, *dogma*, *cue*, *quay*, *fleeting*, *frivolous* and *pretentious* were highly misspelled by the students across the three academic levels. Aside these it is confirmed after the analysis that students committed more omission errors than the other category of spelling errors that occur in the data set. Year one students have the highest rate of omission errors in the data and this is followed by the year three students whilst the year two students have the least rate of omission errors. The reasons for the high rate of omission errors in the data stems from students attempt to manipulate and associate a range of vowels and consonants combinations to form words; their attempt to construct words based on their knowledge of grapheme-phoneme relationships and their eliminating of some phonemes in the words they were required to spell. As far as the substitution errors are concerned, the analysis further confirms that the year three students record the highest rate of this error and this is followed by the year one students whilst the year two students have the least of the errors that were related to substitution errors. In addition, the analysis further confirms that transposition errors are more dominant in the spelling exercise of the year two students and the year three students occupy the second position as far as transposition errors are concerned. However, there is no instance in the data where a first year student is noted of making a transposition error in the spelling exercise.

The finding further reveals that the level of students cannot be used to predict their competence in spelling words in the English Language. This emanates from the fact that there are instances in the data that students from the third year make more errors under some categories of spelling errors that are identified in the data set than their counterparts in the first and second years. With regard to transposition errors for example, none of the first year students is noted in data for committing such category of spelling errors as compared to the

third and second year students who in some instances make errors of spelling that fall under transposition error.

Also, the students could not spell most of the words correctly mainly because most of the words were not familiar to them and they were also not aware of the right pronunciation of most of the words that were dictated to them. It was also confirmed from the analysis that the students' inability to spell most of the words correctly was as a result of their failure to edit their work after the entire spelling exercise.

## **Recommendation**

It is recommended that a second look should be taken at the syllabus of the tertiary institutions in the teaching and learning of Academic Literacy (Communicative Skills) to include topics that would enhance the spelling abilities of students so as to improve their writing skills. That is, beside the grammar based topics that normally characterize the content of most Communicative Skills programme in the various Technical universities in Ghana, students should also be introduced to a topic like phonetics and phonology. This topic, to a large extent, will equip students with the competence in associating graphemes of words in English to their related phonemes. Aside this, the introduction of phonetics and phonology in the course content of the Communicative Skills programme will help the university students, specifically the technical university students, know the distinction between short and long vowels which, to a large extent, will have a significant influence on their spelling abilities of English words. That is, with the introduction of phonetics and phonology in the course content of the Communicative Skills programme, spelling errors like insertion errors, omission errors and substitution errors in students writing will adequately be reduced if not totally eradicated. In dealing with transposition errors, it is also recommended that the teaching of spelling as an aspect of the Communicative Skills programme must be intensified with specific focus on helping students grasp the skills in breaking words correctly into their (words) corresponding syllables. That is, students should be taught the skills in breaking words into their corresponding syllables before they are spelt so as to improve their competence in spelling words that they might not be familiar with.

Another most important strategy that we recommend teachers to use in teaching spelling is to make a conscious effort to help students know the differences and similarities between the rules of spelling words in the first languages of their respective students as against the spelling rules of the target language – English. This, to a large extent, will help prevent errors like omission errors that are normally caused by inter-lingual challenges as students try to impose L1 rules of spelling on L2 orthography. Aside these, we recommend the need to develop an accredited language proficiency level of tertiary students, specifically Technical University students, by means of compulsory language assessments in which spelling is an indispensable component so as to improve the spelling of students. Since most of the students made mention of the fact that their inability to spell most of the words correctly were as a result of their failure to edit their work as well their unfamiliarity with most of the words that they were made to spell, we recommend that the Communicative Skills Units to include literature in English as part of the Communicative Skills course content. With this, students should be introduced to reading European and African novels so as to enrich their vocabulary and to a large extent, improve their writing abilities. The essence of proofreading and editing as a post writing stage, should also be stressed to the students so as to help them avoid some minor errors they mostly commit in their attempt to spell most of the English words.

## References

- Afful, J. B. A. (2007). Academic literacy and communicative skills in the Ghanaian university: A proposal. *Nebula*, 4(3), 141-159.
- Al-Bakri, L. (1998). Error analysis of spelling mistakes committed by English majors at Yarmouk University. Unpublished masters thesis, Yarmouk University, Irbid.
- Alhaisoni, E. M., Al-Zuoud K. M. & Gaudel, D.R. (2015). Analysis of Spelling Errors of Saudi Beginner Learners of English Enrolled in an Intensive English Language Program. *English Language Teaching*, 8(3), 185-192.
- Al-Jabri, F. (2006). *Common English spelling difficulties of Omani learners*. Sultanate of Oman: Ministry of Education.
- Al-Jarf, R. (2008). Sources of spelling errors in EFL Arab college students. Retrieved from faculty.ksu.edu.sa on 25 March, 2018.
- Allaith, Z. A. A. (2010). *Analysis of spelling performance in English among students whose first language is Arabic* (Doctoral dissertation, Texas A & M University).
- Al-Sobhi, B., M., Rashid, S., & Abdullah, A. N. (2018). Arab ESL secondary school students’ attitude toward English spelling and writing. *SAGE Open*, 8(1), 1-11.
- Al-Zuoud, K. M., & Kabilan, M. K. (2013). Investigating Jordanian EFL Students' spelling errors at tertiary level. *International Journal of Linguistics*, 5(3), 164.
- Amable, R. E. (1990). An examination of some grammatical and semantic problems in students’ English at UCC. Unpublished Ph.D. Thesis, University of Cape.
- Amoakohene, B. (2017a). Error analysis of students' essays: A case of first year students of the University of Health and Allied Sciences. *International Journal of Higher Education*, 6(4), 54.
- Antwi, S. (2006). An assessment of spelling errors amongst tertiary students in some selected schools in Cape Coast. An unpublished dissertation, Department of English, University of Cape Coast.
- Asante, K. B. (2007, September 17). Time to stop and think about education. *Daily Graphic*, P.7.
- Bahloul, M. (2007). Spelling errors of Arab learners: Evidence of intergraphic mapping. In C. Coombe & L. Barlow (Eds). *Language Teacher Research in The Middle East*, (pp. 41-51). Mattoon, Ill: United Graphi.
- Barrington, L., Wright, M., & Casner-Lotto, J. (2006). Are they really ready to work? Employers’ perspectives on the basic knowledge and applied skills of new entrants to the 21st century U.S. workforce. Retrieved from [http://www.p21.org/storage/documents/FINAL\\_REPORT\\_PDF10-05-2018.pdf](http://www.p21.org/storage/documents/FINAL_REPORT_PDF10-05-2018.pdf)
- Brown, H. D. (2000). *Principles of language learning and teaching (4th ed.)*. White Plains, NY: Pearson Education.
- Chomsky, N. (1959). A review of B.F. Skinner's verbal behaviour. *Language*, 35, 26-58.
- Chomsky, N. (1965). *Aspects of the Theory of Syntax*. Massachusetts: M.I.T Press.
- Cook, V. (1997). L2 users and English spelling. *Journal of Multilingual and Multicultural Development*, 18(6), 474-488.
- Cook, V. J. (1999). Teaching spelling. Retrieved May 10th, 2015 from [www.essex.ac.uk/~vcook](http://www.essex.ac.uk/~vcook).
- Cook, V. J. (1997). L2 users and English spelling. *Journal of Multilingual and Multicultural Development*, 18(6), 474-488.
- Corder, S. P. (1981). *Error analysis and interlanguage*. Oxford: Oxford University Press.
- Corder, S. P. (1994). A role for the mother tongue. In S. M. Gass & L. Selinker (Eds.), *Language transfer in language learning* (pp.18-31).
- Corder, S.P. (1974). The elicitation of interlanguage. IRAL. Special issue on the occasion of B. Malmberg’s 60th birthday. (ed. G. Nickel). 51 – 63.
- Cronnell, B. (1985). Language influences in the English writing of third-and sixth-grade Mexican-American students. *The Journal of Educational Research*, 78(3), 168-173.
- Dörnyei, Z. (2007). *Research methods in applied linguistics*. New York: Oxford University Press.
- Durgunoğlu, A. Y. (2002). Cross-linguistic transfer in literacy development and implications for language learners. *Annals of Dyslexia*, 52(1), 189-204.
- Edu-Buandoh D. (1997). A Preliminary Report on the Study of Error Patterns in the Written Essays of Senior Secondary Students. English in Ghana. A Publication. The Ghana English Studies Association.
- Ehri, L. C. (2000). Learning to read and learning to spell: Two sides of a coin. *Topics in Language Disorders*, 20(3), 19-36.
- Elbro C., Scarborough H.S. (2004). Early identification. In: Nunes T., Bryant P. (eds) *Handbook of Children’s Literacy*. Springer, Dordrecht.



- Ellis, A. W., & Young, A. W. (2013). *Human cognitive neuropsychology: A textbook with readings*. Psychology Press.
- Fender, M. (2008). Spelling knowledge and reading development: Insights from Arab ESL Learners. *Reading in a Foreign Language*, 20(1), 19-42.
- Figueredo, L. (2006). Using the known to chart the unknown: A review of first-language influence on the development of English-as-a-second-language spelling skill. *Reading and Writing*, 19,873-905
- Garrett, P., Griffiths, Y., James, C., & Scholfield, P. (1995). The development of a scoring scheme for content in transactional writing: Some indicators of audience awareness. *Language and Education*, 9(3), 179-193.
- Gentry, J. R. (2000). A retrospective on invented spelling and a look forward. *The Reading Teacher*, 54(3), 318-332.
- Golshan, M. & Reigani, P. (2015). Analysis of spelling errors: Iranian female business learners of English. *MJAL*, 7(2), 175 -188.
- Hildreth, G. (1962). *Teaching spelling: A guide to basic principles and practices*. New York: Holt, Rinehart and Winston, Inc.
- Hodges, R. E. (1984). *Spelling*. ERIC Clearinghouse.  
<http://homepage.ntlworld.com/vivian.c/ Writings/index.htm>
- Jackson, S.L. (2009). *Research methods and statistics: A critical thinking approach (3rd ed.)* Belmont, CA: Wadsworth.
- Johnson, M. M. (2013). The relationship between spelling ability and reading fluency and comprehension in elementary students. Unpublished Master's thesis, Marquette, MI: Northern Michigan University.
- Katzir, T., Kim, Y., Wolf, M., Kennedy, B., Lovett, M., & Morris, R. (2006). The relationship of spelling recognition, RAN, and phonological awareness to reading skills in older poor readers and younger reading-matched controls. *Reading and Writing*, 19(8), 845-872.
- Kelman, M. E., & Apel, K. (2004). Effects of a multiple linguistic and prescriptive approach to spelling instruction: A case study. *Communication Disorders Quarterly*, 25(2), 56-66.
- Koda, K. (2005). *Insights into second language reading: A cross-linguistic approach*. Cambridge: Cambridge University Press.
- Kusuran, A. (2017). L2 English spelling error analysis: An investigation of English spelling errors made by Swedish senior high school students.
- Lyon, R. G. (2002). Reading development, reading difficulties, and reading instruction: Educational and public health issues. *Journal of School Psychology*, 40, 3-6.
- Marshall, M. N. (1996). Sampling for qualitative research. *Family Practice*, 13(6), 522-526.
- Martin-Lacroux, C., & Lacroux, A. (2017). Do employers forgive applicants' bad spelling in résumés? *Business and Professional Communication Quarterly*, 80(3), 321-335.
- Mesmeh, T. (2012). The effect of the cover, copy and compare strategy on the ninth graders' acquisition and retention of spelling and their attitudes towards the strategy. The Islamic University of Gaza. Retrieved from <http://library.iugaza.edu.ps/thesis/101557.pdf>
- Moats, L. (2009). Knowledge foundations for teaching reading and spelling. *Reading and Writing*, 22(4), 379-399.
- Moats, L. C. (2006). How spelling supports reading and why it is more regular and predictable than you think. *American Educator*, 6, 12-43.
- Nahari, A. A., & Alfadda, H. A. (2016). From memorising to visualising: The effect of using visualisation strategies to improve students' spelling skills. *English Language Teaching*, 9(6), 1-18.
- Naruemon, D., (2012). Causes of English spelling errors made by Thai foreign language learners. *ARECLS*, 10, 22-43.
- Nyamasyo, E.A. (1994). An analysis of the spelling errors in the written English of Kenyan pre-university students. *Language, Culture and Curriculum*, 7(1), 79-92.
- Oisín T. (2007). *Process tracing and elite interviewing: A case for non-probability sampling*. Philadelphia: John Benjamins.
- Othman, A.K. (2018). An investigation of the most common spelling errors in English writing committed by English-major male students at the University of Tabuk. *Journal of Education and Practice*, 9(1), 17-22.
- Owusu-Ansah, A. (2005, January, 30th) "English Student Writes". *Daily Graphic*, p.17.
- Pijper, N. C. (2003). The phonological awareness, written spelling and oral reading of learners in an inclusive English-medium education setting (Doctoral dissertation, University of Pretoria).
- Punch, K. F. (2013). *Introduction to social research: Quantitative and qualitative approaches*. Sage.
- Ramadan, S. (1986). A study of spelling errors made by third preparatory and third secondary classes in Jordan through context form. Unpublished Master's thesis, Yarmouk University, Irbid.
- Ritchey, K. D. (2008). The building blocks of writing: Learning to write letters and spell words. *Reading and Writing*, 21, 27-47.

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Sackey, J. A. (1997). The English language in Ghana: A historical perspective. *English in Ghana*, 126-139.

Saunders, M., Lewis, P. & Thornbill A. (2003). *Research methods for business students*. Harlow: Pearson Education.

Saville-Troike, M. (2006). *Introducing second language acquisition*. Cambridge: Cambridge University Press.

Smedley, D. (1983). *Teaching the basic skills: Spelling, punctuation, and grammar in secondary English*. New Fetter Lane London: Methuen and co. Ltd.

Staden, A. V. (2010). Improving the spelling ability of grade 3 learners through visual imaging teaching strategies. *Per Linguam: A Journal for Language Learning*, 26(1), 13-28.

Stevens, A. C. (2006). Effects of altering grammar and spelling on perceived author credibility. Retrieved from [http://www.clemson.edu/cujo/manuscript.php?manuscript\\_ID=142](http://www.clemson.edu/cujo/manuscript.php?manuscript_ID=142).

Subhi, S. N., & Yasin, M. S. (2015). Investigating study of an English spelling errors: A sample of Iraqi students in Malaysia. *International Journal of Education and Research*, 3(6), 235-246.

Twum (2011). Analysis of spelling errors in the written essays of Junior High Schools in English language. An unpublished dissertation, Department of English, University of Cape Coast.

Wolff, H. (1958). An Osage graphemic experiment. *International Journal of American Linguistics*, 24(1), 30-35.

Yankson, K.E. (1994). *Better English through concord for West African students*. Accra: Commercial Associates.

## Appendix

**Table 1: Percentage of Errors Associated with the Words**

		Year 1		Year 2		Year 3	
		Correct	Wrong	Correct	Wrong	Correct	Wrong
1	CITIZEN	97.89	2.11	96.08	3.92	82.93	17.07
2	PASSIONATE	64.79	35.21	88.24	11.76	75.61	24.39
3	ACCOMMODATION	69.01	30.99	92.16	7.84	85.37	14.63
4	AMBASSADOR	54.93	45.07	88.24	11.76	54.88	45.12
5	COMMITTEE	58.45	41.55	98.04	1.96	58.54	41.46
6	CONGRATULATIONS	78.87	21.13	92.16	7.84	84.15	15.85
7	ADVENTURER	25.35	74.65	82.35	17.65	34.15	65.85
8	OPAQUE	56.34	43.66	96.08	3.92	63.41	36.59
9	ELOQUENT	58.45	41.55	66.67	33.33	51.22	48.78
10	MINUTE	48.59	51.41	86.27	13.73	68.29	31.71
11	MANAGEMENT	89.44	10.56	98.04	1.96	96.34	3.66
12	PROGRAM(ME)	87.32	12.68	98.04	1.96	92.68	7.32
13	JUDGEMENT	83.10	16.90	100	-----	84.15	15.85
14	CONSCIOUS	15.49	84.51	60.78	39.22	26.83	73.17
15	ELABORATE	66.20	33.80	84.31	15.69	82.93	17.07
16	PACIFY	35.92	64.08	72.55	27.45	34.15	65.85
17	QUEUE	35.21	64.79	96.08	3.92	40.24	59.76
18	AGGRAVATE	40.85	59.15	66.67	33.33	51.22	48.78
19	GORGEOUS	36.62	63.38	76.47	23.53	37.80	62.20
20	QUAY	9.15	90.85	-----	100	14.63	85.37
21	FLEETING	19.01	80.99	50.98	49.02	13.41	86.59

22	CUE	7.04	92.96	13.73	86.27	1.22	98.78
23	CONSCIENTIOUS	2.11	97.89	-----	100	-----	100
24	SOLITUDE	52.11	47.89	37.25	62.75	62.20	37.80
25	DOGMA	19.01	80.99	29.41	70.59	1.22	98.78
26	PRETENTIOUS	12.68	87.32	62.75	37.25	15.85	84.15
27	FRIVOLOUS	7.75	92.25	23.53	76.47	4.88	95.12
28	CANTANKEROUS	4.23	95.77	1.96	98.04	-----	100
29	EPHEMERAL	9.15	90.85	----	100	4.88	95.12
30	MAGNANIMOUS	56.34	43.66	47.06	52.94	43.90	56.10