Investigating the Use of Inflectional and Derivational Morphemes in Academic Written Essays in EFL Contexts in the UAE

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Abstract

The present study investigated the impact of derivational and inflectional morphemes on improving the quality of English as a foreign language (EFL) learners' essay writing and explored the perceptions of English teachers regarding the challenges of using these morphemes in essay writing in the UAE. Using the phenomenological mixed methods research approach, data were collected using document analysis of 30 written essays of grade 10 Arab EFL learners and semi-structured interviews with five English teachers. Quantitative data were analyzed using descriptive and correlational statistics. However, qualitative semi-structured interviews were analyzed using thematic analysis. The findings of the study demonstrated that the frequency of inflectional morphemes in learners' writing was higher than the frequency of derivational morphemes. Additionally, the findings revealed that there was a positive moderate correlation between the number of bound morphemes used and the quality of learners' writing. The qualitative findings showed a number of challenges that students encountered while using morphemes in their writing.

Keywords: derivational morphemes, inflectional morphemes, morphological awareness, essay writing, writing quality

INTRODUCTION

Background of the study

Morphology is the study of word structures as well as the rules and specifications governing word formation in languages. Therefore, it is considered as an inseparable part of the grammatical understanding and awareness of a language (Giazitzidou et al., 2023; Oz, 2014). Moreover, learners of the English language are required to develop a solid basis of how words are structured and formed (Kieffer & Lesaux, 2011; Matruglio, 2020). The significance of developing morphological awareness of teachers is foregrounded in a number of studies in that it allows teachers to support their students to understand how words enter a language and what constitutes words through a combination of suffixes and prefixes. Furthermore, Templeton (2012) and Cohen-Mimran et al. (2022) argue that there is evidently a positive impact associated with learners' awareness of the structure of words as reflected by their increased vocabulary size, greater reading understanding and better written essays. Therefore, morphology can be a useful teaching tool for EFL learners who want to develop their writing skills. In a similar vein, Oz (2014) and Levesque et al. (2021) argue that language learners, who understand affixation and word structure processes, become proficient language speakers. Therefore, the purpose of the current study is twofold; to investigate the impact of derivational and inflectional morphemes on improving the quality of EFL tenth graders' writing and explore the perceptions of English teachers regarding the challenges of using these morphemes properly in essay writing.

The research problem

Word structure and word formation are essential to morphological awareness since this leads to increasing vocabulary knowledge and developing other language skills such as writing and reading (Desrochers et al., 2018; Giazitzidou & Padeliadu, 2022). Despite the significant role of morphological awareness for improving language learners' capabilities,

this area is mostly abandoned by English language teachers and curriculum developers (Marjokorpi, 2023; Tahaineh, 2012). Moreover, learners of English struggle to understand the structure of sentences and the word formation process, especially when it comes to employing them in their essay writing using derivatives, prefixes, and suffixes (Kuo & Anderson, 2006; Sarfraz & Abbas, 2018). In this regard, Fejzo (2015) states that most learners of English have a difficulty understanding the way in which words are formed using different types of derivational and inflectional morphemes including improper addition of prefixes and suffixes, limited lexical awareness, and finite word structure knowledge. As a result, this has a substantial impact on other language skills including writing. By the same token, deficiency of phonological and morphological awareness is found to be a commonplace among struggling readers and writers as stated by Bowers and Kirby (2009) and Haase and Steinbrink (2022).

In addition, EFL students learning, who struggle with the language, become unable to build their ability to write effective essays because they do not have a strong foundation in morphological awareness (Justi et al., 2023; Wolter & Green, 2013). An intensive research into the existing literature revealed that there is a plethora of studies conducted to investigate the impact and correlation of morphological awareness on different language skills, especially in relation to vocabulary and reading comprehension skills (Cohen-Mimran et al., 2022; Freitas et al., 2018; Görgen et al., 2021; Haase & Steinbrink, 2022). However, there is a scarcity of research focusing on the effects of morphological awareness on essay writing (Agustin, 2010; Ginsberg et al., 2011; Saeidi & Mirzapour, 2013; Sarfraz & Abbas, 2018; Zhang & Koda, 2013). Therefore, there is a necessity to conduct more research in this area to find out the correlation and impact of derivational and inflectional morphemes on improving the quality of students' writing.

Significance and rationale

The rationale of conducting the present study stems from the significant role that word structure and word formation play in improving a variety of language skills including spelling, grammar, lexis, reading and writing. Therefore, learning about morphology cannot be neglected in order to raise learners' awareness, which in turn, leads to developing their overall language learning (Crossley, 2020; Masrai, 2016). In addition, there is a consensus among scholars on the necessity of teaching morphology explicitly like other language skills, and curriculum specialists and teachers need to pay an equal attention to teaching morphology the same way they do with teaching and delivering other language skills (Wahid & Farooq, 2019).

The importance of the present study is also highlighted by Apel (2014) who states that morphological awareness is a fundamental linguistic ability that is worth more attention in language learning due to the essential part it plays in developing language capabilities. Besides, there are few studies that have investigated the acquisition of derivational and inflectional morphemes and their impact on developing EFL Arab learners' essay writing (Alotaibi, 2016). Therefore, the current study is anticipated to enrich the existing literature through investigating the impact of using derivational and inflectional morphemes on improving students' essay writing, which has been under-researched for EFL Arab learners of English. Besides, the present study collected data from written essays and semi-structured interviews to help interpret data in a fuller way, with the ultimate purpose of adding more in-depth understanding and justification to the nature of the relationship between derivational and inflectional morphemes and the writing quality. In addition, the recommendations and implications of the present study are also noteworthy as they will be shared with stakeholders, policy makers and curriculum specialists in the UAE in order to promote students' learning experience.

Research aims and questions

The study aims at investigating the impact of derivational and inflectional morphemes on improving the quality of EFL Arab learners' writing and exploring the perceptions of English teachers regarding the challenges of using these morphemes properly in essay writing in the UAE. Thus, the following research questions are used to fulfil the study objectives:

RQ1: What is the overall frequency of derivational and inflectional morphemes in grade 10 students' essay writing?
RQ2: What is the correlation between the total number of derivational and inflectional morphemes and the quality of grade 10 essay writing? 2-
RQ3: What are the perceptions of English teachers regarding the challenges of using derivational and inflectional morphemes in grade 10 students' essay writing?

Literature Review and Theoretical Underpinning
### Conceptual Framework
Morphology

Oz (2014) defines morphology as the study of the inner composition of words and the rules surrounding the structure of words in a language. He further argues that morphology is a basic part of the grammatical awareness of a language, yet it is unconscious knowledge just like the linguistic awareness. In a similar vein, Stonham (2007) states that morphology refers to the mental system employed in word formation or the field of linguistics that deals with word formation and structure.

Morphemes

According to Lieber (2009), morphemes are the smallest units of meaning or grammatical function. Based on this definition, units of meaning include words such as enjoy, and units of grammatical function incorporate elements used to indicate tense or plural forms (Bae, 2016). A similar definition is elucidated by Stonham (2007) who concur that morphemes are the smallest linguistic segments with a grammatical role. However, Sarfraz and Abbas (2018) mention that morphemes are categorized into two groups; free morphemes or basic words, which cannot be further split into other meaningful units (these are sub-divided into functional and lexical) and bound morphemes or the smallest units that are linked to other forms to create more complex words (these are further divided into derivational and inflectional). The current study focuses only on bound morphemes. Therefore, the conceptual underpinning addresses only the two sub-categories of bound morphemes (derivational and inflectional morphemes). Figure 1 shows a classification of English morphemes with examples.

Figure 1
A classification of English morphemes adopted from (Oz, 2014)
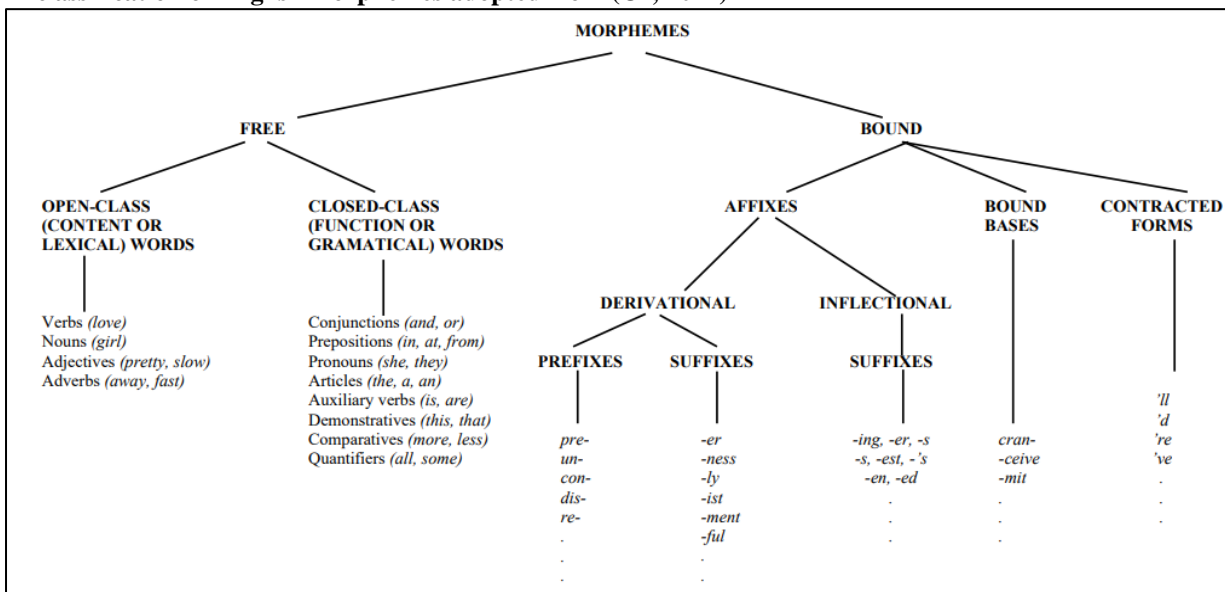
Derivational morphemes

Carstairs-McCarthy (1992) states that derivational morphemes change the grammatical category of words, and they include derivational suffixes if they come at the end of a word and derivational prefixes if they occur at the beginning of a word. For instance, the verb educate forms the noun education by suffixation of -ion and from the noun education we can form the adjective educational by suffixation of -al. Similarly, Rugaiyah (2018) concurs that derivational morphemes are used to create new lexical items using prefixes and suffixes. This definition is similar to Yule (2010) who argues that derivational morphemes are utilized to create new vocabulary words that have a different grammatical category as demonstrated in the sample of adjective-forming suffixes in Table 1.

Table 1
A sample of adjective-forming suffixes ((Fitria, 2020)

Suffix	Meaning	Example
-able	being "able"	reasonable, comfortable
-al	relating to	cultural, official, nutritional, educational, personal
-full	full of	Plentiful, peaceful, beautiful, wonderful, meaningful
-ic	characteristic	economic, artistic, energetic, realistic, naturalistic
-cal	relating to	psychological, physical, historical, musical
-ous	characterized by	religious, dangerous, rebellious

Inflectional morphemes

Fitria (2020) defines inflectional morphemes as the type of morphemes that do not result in a change of the word's syntactic or grammatical category. For example, the verb play can be formed as plays, played, and playing, yet it is still a verb. Similarly, Larrivée (1995) states that inflectional morphemes are more relevant to syntax. These definitions are harmonious with that of Mackenzie (2011) who report that inflectional morphemes produce new forms of the same word instead of creating new word categories or lexical entries. Furthermore, Yusuf (2017) agrees that inflectional morphemes are employed to show some features of the syntactic role of a word. Moreover, Fitria (2020) mentions that there are eight inflectional morphemes in English, and they are used to show if a word is singular or plural, if it is present tense or not, and if the word is in the comparative or the superlative form as summarized in Table 2.

Table 2
Eight inflectional morphemes of English adopted from (Fitria 2020)

English Inflectional Morphemes	Added to	Examples
-s plural	nouns	She has got two guitar**s**.
-'s possessive	nouns	Zeynep**'s** hair is long.
-er comparative	adjectives	Zeynep has long**er** hair than Derya.
-est superlative	adjectives	Zeynep has the long**est** hair.
-s 3rd person singular present tense	verbs	Zeynep play**s** the guitar.
- ed past tense	verbs	She play**ed** the guitar at the party.
- ing progressive	verbs	She is play**ing** the guitar at the party.
-en past participle	verbs	She has tak**en** the guitar to the party.

Theoretical framework
Structuralism Learning Theory (SLT)

One of the theories that underpin the present study is structuralism, which was established by Ferdinand de Saussure (Alsubaiai, 2021). Structuralism is explained as a method that focuses on the structure of the underlying system and the links that exist among its constituting elements. According to the structuralist approach, the meaning of a word is less dependent on the object it refers to, but it is determined by the underlying structure of the word (Kridel, 2008). Between 1940 and 1960, studying morphology was effectively highlighted by a plethora of structuralists who examined topics and issues associated with the theory of word formation (e.g., Harris, 1980; Hockett, 1947).

The selection of the structuralism learning theory as a relevant underpinning of the current study is supported by the fact that the structuralist approach is regarded as meritorious due to its contributions to the study of morphology (Vressick-Chilborn & Rachman, 2020). For instance, among the many contributions of structuralism is the way words are considered as having complex internal structures (de Saussure et al., 1960). This is contradictory to the previous traditional view of words as the basic unit of grammatical theory and lexicography (de Saussure et al., 1960). Similarly, the structuralist approach identifies words as analyzable in terms of morphemes, which are the smallest units of meaning and grammatical structures (Fitria, 2020).

Behaviorism Learning Theory (BLT)

Behaviorism is another psychological theory of learning that underpins the current study. The main concept of the behaviorist theory is the interpretation and analysis of human behavior according to the pattern of stimulus-response-interaction as well as the link between them (Cox, 2008). To elaborate this further, the theory implies that association between a specific response and a stimulus forms a habit. According to (Ziafar & Namaziandost, 2019), learning -as viewed by behaviorism- is altering the behaviors of learners into what is known as the desired behavior, which receives positive reinforcement whereas the behavior with the least fit is awarded negative.

The significance of behaviorism in language learning is evidently seen in the utilization of various teaching and learning approaches such as the audio-lingual method, the grammar translation method, and the direct method (Ziafar & Namaziandost, 2019). The choice of the behaviorist approach as a theoretical underpinning of the present study is because the theory has a direct connection to the approach of teaching writing that is known as "the product approach" (Dulaney et al., 1965; Fantino & Staddon, 1985). Furthermore, teaching writing necessitates imitating and transferring models given by the instructor in order to reach an error-free final approach (Rejeki, 2017). In this regard, the theory is applicable to the study in that it explores English teachers' perception of the challenges of using derivational and inflectional morphemes in EFL Arab learners' essay writing.

Literature Review
The impact of morphological awareness on language receptive skills

A number of studies concluded that morphological awareness was an effective predictor of improved reading, lexis, grammar and listening skills (Justi et al., 2023; Marantz & Jensen, 1992; Northey et al., 2015). Similarly, some

researchers averred that morphological awareness was essential to understanding reading and other language skills not only beyond the word level, but also at the sentence and text level (Apel, 2014; Cohen-Mimran et al., 2022; Levesque et al. 2021). In a similar vein, a plethora of studies found out that morphological awareness had played a significant part in developing young learners' reading as part of their literacy skills improvement (Deacon et al., 2014; Kirby et al., 2011; McCutchen, Green & Abbott, 2008). These findings were harmonious with the results of a number of previous studies (e.g., Khoshkhoonejad et al. 2016; McCutchen & Logan, 2011; Mousikou et al., 2020) where morphological awareness had positively correlated with developed word decoding and improved vocabulary.

In addition, a number of studies investigated the effects of morphological awareness on different stages of child development, and they concurred that morphological understanding had a substantial effect on vocabulary acquisition and word retrieval after the age of eight years (Anglin et al., 1993; Desrochers et al., 2018; Derwing, Smith & Wiebe, 1998; Taha & Saiegh-Haddad, 2016). Consistent with these findings, Kieffer and Lesaux (2011) mentioned that language learners with sufficient knowledge of word formation using suffixes, prefixes and root words had a better ability to comprehend new words as well as understand reading texts. In the same way, some studies concluded that use of morphemes resulted in improving learners' listening skills (Ginsberg et al., 2011; Karimi, 2012). In a different study, Saeidi and Mirzapour (2013) employed the quasi-experimental study design using a pretest-posttest design with 20 participants to investigate the impact of morphological awareness on participants' listening skills. The results showed that participants' listening comprehension skills improved significantly after receiving morphological instructions.

The impact of morphological awareness on language productive skills

According to Wahid and Farooq (2019), very few studies investigated the impact of morphological awareness on learners' writing skills. In this respect, a study conducted by Perlmutter (2014) revealed that knowledge of morphemes resulted in improving learners' ability of composing written sentences. These findings were similar to the results concluded by Allen and Lembke (2020) in which morphological awareness proved to play a significant part regarding word choice and sentence composition in writing. To put it in another way, these studies reached similar findings with a number of previous studies in that the capability of learners to identify morphological relations among words provided easiness and accessibility to a variety of word forms when writing essays and other text types (e.g., Bowers & Kirby, 2009; Cao, 2022; Green et al., 2003). However, some studies went beyond this, and they examined the impact of morphological awareness on the cohesiveness of written texts. For example, Perfetti (2007) stated that morphological understanding led to creating cohesive and meaningful representations of words and overall texts. In a number of similar studies, it was concluded that the effective understanding of morphemes provided grammatical cues, which could guide writers in creating cohesive sentences using a variety of word forms and structures (Bahr et al., 2012; Bowers & Kirby, 2009; Green et al., 2003; Northey at al., 2015).

In a comparative study between Chinese and Spanish learners of English, Sun et al. (2022) argued that there were significant differences in terms of derivational and inflectional morpheme acquisition, especially in relation to their impact on learners' speaking and writing skills. On the contrary, Farran et al. (2011) mentioned that morphological awareness of Arabic and English were not related to each other. Therefore, this was a hinderance to Arab learners of English in terms of learning different language skills including writing and speaking (Wahid & Farooq, 2019). By the same token, these results were consistent with those identified by Saiegh-Haddad and Geva (2007) who stated that there was no association of morphological awareness between Arabic and English and the morphological structure of the two languages was not the same. Although the majority of previous studies provided evidence of the positive effects of morphological understanding on EFL learners' writing and speaking skills, that there is not a single study stating a straightforward contribution of morphological awareness to EFL learners' writing skills as averred by Wahid and Farooq (2019).

Overall, despite the huge number of studies that examined the impact of morphological awareness on improving L2 different language skills (e.g., Cole et al., 2018; Simpson et al., 2019), little emphasis is given to investigate the influence of morphological awareness on writing, particularly for EFL Arab learners (Cao, 2022; Wahid & Farooq, 2019). Therefore, the current study is anticipated to add a missing piece to the existing literature in order to fully comprehend the effects of derivational and inflectional morphemes on the writing quality of EFL Arab learners.

Research Methods

The present study used the phenomenological mixed methods approach to investigate the correlation between bound morphemes (both derivational and inflectional) and the quality of essay writing for grade 10 Arab EFL learners. According to Creswell and Tashakkori (2007), researchers might employ the phenomenological mixed methods approach to inform the qualitative and quantitative data collection, data analysis and interpretation. Similarly, Halcomb (2018) states that the mixed methods approach is mostly convenient to numerous research since it combines qualitative and quantitative approaches to integrate findings and make inferences using both approaches.

Quantitative Research Methods

Apuke (2017) mentions that quantitative research utilizes various techniques such as document analysis, surveys, experiments, and tests to collect numerical data. Creswell and Tashakkori (2007) also states that researchers employ the quantitative approach to examine the different relations that exist among variables so that the collected numerical data are analyzed using statistical procedures. In this regard, the quantitative research approach was employed in the present study to answer research questions 1 and 2. To elaborate this further, the quantitative descriptive statistics approach was used to answer the first research question through analyzing the frequency of bound morphemes (both derivational and inflectional) in learners' essay writing. However, the quantitative correlational statistics approach was selected to answer the second research question through identifying the correlation between the total number of bound morphemes used and the quality of students' writing.

Qualitative Research Methods

Ozanne et al. (1992) concur that qualitative research is meant to provide results that are not reached through statistical procedures. In a similar vein, Flick (2018) claims that qualitative research focuses on interpreting the subjective meaning of a certain phenomenon through gathering non-quantifiable data. Moreover, adopting qualitative research methods results in producing detailed description of participants' emotions, attitudes, opinions, and experiences (Maniski, 2000). Therefore, the qualitative descriptive research method was adopted in the current study to answer the third research question through exploring the perceptions of five English teachers regarding the challenges of using bound morphemes in grade 10 Arab EFL learners' essays. For this reason, the researchers opted for semi-structured interviews with open-ended questions to obtain rich details of English teachers' perceptions (Watkins, 2012). In addition, semi-structured interviews were purposefully selected to provide participants with enough freedom and ease to share their perceptions, opinions, and attitudes about the phenomenon under study (Creswell & Poth, 2016). In accordance with the study's semi-structured interview protocol, participants were contacted, and their consent was obtained in advance. Each interview lasted for 30 minutes where the researchers re-introduced participants with the study's goals and reassured them of their privacy and the security of their data. Interviews were recorded, transcribed and qualitatively analyzed using thematic analysis.

The semi-structured interview questions focused on areas such as the availability of resources and teaching materials to teach morphemes at school, the methods and techniques employed in teaching morphemes to EFL learners, the effects of using morphemes to promote students' writing skills, the design of English curriculum and its integration of morphemes, the main challenges of using bound morphemes in EFL learners' essays, and the recommended methods of overcoming these difficulties (see Appendix A). Table 3 provides a summary of the research methods and instruments used in the current study.

Table 3
A summary of the research methods and instruments of the study

Research Questions	Approach	Participants	Instruments
1- What is the frequency of derivational and inflectional morphemes in grade 10 students' writing?	Quantitative descriptive statistics	30 grade 10 Arab EFL learners at a private school in the UAE	Manual annotation
2- What is the overall correlation between the total number of derivational and inflectional morphemes and the quality of students' writing?	Quantitative descriptive statistics	30 grade 10 Arab EFL learners at a private school in the UAE	Pearson correlation coefficient
3- What are the perceptions of English teachers regarding the challenges of using inflectional and derivational morphemes in grade 10 students' essays writing?	Qualitative descriptive	Five English teachers at a private school in the UAE	Semi-structured interviews

It is vitally significant to pilot the data collection instruments before conducting the study (Majid et al., 2017). Therefore, the researchers piloted the interview questions to test them and to get some practice in the interviewing process. According to Kvale (2007), piloting the interviews leads to strengthening the interview protocol through identification of defects that need some modifications. As such, some of the interview questions were adjusted to keep the study more focused and to get the results that would help to answer the research questions of the study.

Participants, Sampling and Corpus

Sampling is regarded as a key component of any research due to the substantial influence that it can have on the quality of research results (McKim, 2016). To fulfil the purpose of the present study, 30 personal narrative essays of 30 female EFL Arab learners (N=30) of grade 10 were used to quantitatively analyze the use of bound morphemes (both inflectional and derivational) in their writing. Students studied the American curriculum at a private school in the UAE. They were all female Arab learners who had been studying EFL for 12 years. Participants' age range was between 13 to 14 years, and they were from different nationalities such as Emiratis, Egyptians, Palestinians, Jordanians, and Sudanese.

This research focused on Arab students learning EFL in tenth grade since this grade level marks the transition from elementary to secondary school. In addition, tenth graders must take standardized tests in English, such as the International English Language Testing System (IELTS) and the Test of English as a Foreign Language (TOEFL), for which they must demonstrate their ability to write coherently in order to receive high marks. This is a compulsory requirement for grade 10 students in order to meet the requirements of the English learning course at school.

However, the qualitative data were collected from five English teachers who taught English for high school students. All five teachers were females who had solid experience in teaching EFL, and their teaching expertise ranged from 10 to 13 years. The choice of participants was mainly based on convenience sampling since it was easy to access and implement using the required sample size (Cubit & Lopez, 2011).

The Writing Task

All 30 Arab EFL learners of tenth grade were asked to write a personal narrative essay of at least 250 words as part of their end of term two exams of the academic year (2020-2021). Students were asked to choose one of two topics and write an essay using the structure that was covered as part of the academic writing course (see Appendix B). The final essays were collected, marked and quantitatively analyzed for the purpose of the present study.

Data Analysis and Research Procedures

The personal narrative essays were marked according to a 20-points holistic rubric that was automatically generated by the Holt McDougal online software, which was used as part of the academic writing support documents at school (see Appendix C). The rubric included criteria such as *the introduction, organization of ideas, grammar use, narrative style, and punctuation.* The participants' essays (N=30) were marked by five experienced English teachers who taught high school students and who had at least 10 years of expertise in assessing academic writing. The inter-raters had nearly perfect consistency in marking the essays as measured by *Cronbach Alpha at 0.92.* Following this, manual annotation was employed by the researchers to identify the frequent use of bound morphemes in participants' essays (Appendix D). Furthermore, Pearson Coefficient correlation was utilized to identify the linear correlation between the total number of morphemes used and the quality of students' writing as reflected by their marks out of 20.

Regarding qualitative data that were collected using semi-structured interviews, the researchers used thematic analysis to analyze them. According to Javadi and Zarea (2016), thematic analysis is an approach used to reach meaningful concepts and themes using data through highlighting, examining, and recording themes. According to DeSantis and Ugarriza (2000), thematic analysis is widely used due to its flexibility. It also helps to reflect and clarify the reality as argued by Morse (2009). In addition, Javadi and Zarea (2016) state that thematic analysis is regarded as a fundamental method for qualitative analysis in interpretive phenomenological research as well as other research methods. For these reasons, the researchers examined the transcribed qualitative data meticulously to find clusters of replies that were similar enough to be grouped together. After analyzing the interviews, the researchers were able to draw meaningful conclusions and develop useful themes.

Ethical considerations

Before conducting the current study, the researchers got informed consent forms of all participants upon providing them with the purpose and significance of the study. They were assured that their names would not be used. As such, anonymity and confidentiality were assured (McKim, 2016). Moreover, participants were informed that they had the freedom to withdraw at any time without justifying their actions (Fleming, 2018). A written consent form was received from the school principal and the Head of English Department after informing them of the rationale and significance of the study.

Findings and Discussion
Quantitative Findings and Discussion

RQ1: What is the overall frequency of derivational and inflectional morphemes in grade 10 students' essay writing?
The first research question examined the frequency of occurrence of bound morphemes (both derivational and inflectional) in grade 10 students' essays. This part provides the data results and discussion related to this research question. Table 4 shows the frequency of occurrence of morphemes in essay writing of participants (N=30).

Table 4
**Descriptive statistics of derivational and inflectional morphemes**

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
Inflectional Morphemes	30	74	26	100	1707	56.90	18.342
Derivational Morphemes	30	47	14	61	1025	34.17	12.668
Valid N (listwise)	30						

As shown in Table four, the mean inflectional morphemes (μ=57) was substantially greater than the mean derivational morphemes (μ=34). In the same way, the minimum number of inflectional morphemes used was 26, which was almost as twice as the minimum number of derivational morphemes at only 14 morphemes. The difference between both categories was significantly evident in the maximum number of morphemes used since it accounted for 100 inflectional morphemes compared to only 61 derivational morphemes in participants' essays. This significant difference was proved by the total number of inflectional morphemes (Σ = 1707) which was substantially larger than the total number of derivational morphemes (Σ = 1025). As a result, the above statistical analysis using the frequency table demonstrated that inflectional morphemes were more frequent than derivational morphemes in participants' essay writing. Detailed frequencies of inflectional morphemes and derivational morphemes are provided in Appendix E and Appendix F respectively.

These findings were consistent with a number of studies that revealed the higher number of inflectional morphemes over derivational morphemes in students' written texts (Allen & Lembke, 2020; Bahr et al., 2012; Green et al., 2003). The findings were also similar to those reached by Berko (1958) who concurred that young children between five and seven years developed better inflectional morphological understanding than derivational ones. In addition, Anglin et al. (1993) had similar results in which he stated that young learners of English were identified using less derivational morphemes compared to inflectional ones. In a similar vein, the findings of the current study were harmonious with those concluded by Wibowo (2016) who averred that the most dominant morphemes in students' essay writing were inflectional morphemes, particularly *-s* plural.

To further elaborate on the quantitative results of research question 1, Figure 2 compared the frequency distribution of derivational and inflectional morphemes, and it was clear that there was an abundant use of inflectional morphemes compared to derivational morphemes in participants' essays. This indicated that students were more able to produce new forms of the same word without changing its grammatical category than they were able to create new lexical items using prefixes and suffixes (derivation).

Figure 2
Comparison of the frequency distribution of derivational and inflectional morphemes
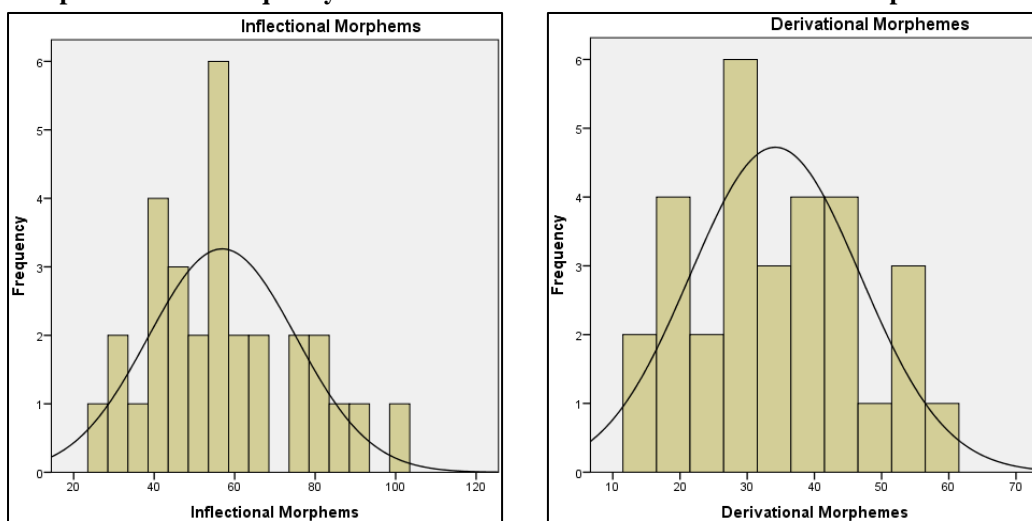
RQ2: What is the correlation between the total number of derivational and inflectional morphemes and the quality of grade 10 students' essay writing?

The second research question examined the linear correlation between the total number of bound morphemes used (both derivational and inflectional) and the quality of participants' writing as reflected by their marks. Therefore, Pearson correlation coefficient was used in order to identify the type and degree of association between these two variables. Table 5 presented a summary of the findings after running the correlational statistical analysis.

Table 5
The correlation between the total number of bound morphemes and participants' marks

		Total number of bound morphemes	Students' writing mark
Total number of bound morphemes	Pearson correlation Sig. (2-tailed) N	1 30	.447* .013 30
Students' writing Sig. (2-tailed)	Pearson correlation mark N	.447* .013 30	1 30
* Correlation is significant at the 0.05 level (2-tailed)			

According to Table 5, it is noted that Pearson correlation coefficient was (r=0.447), which showed a positive moderate correlation between the total number of morphemes and participants' marks. In a more elaboration, the degree of association between these two variables was interpreted as a moderate correlation since its value was *0.3 < 0.44 < 0.5* (Tavallali et al., 2017). In order to confirm the validity and reliability of the obtained results, the significance value was used to confirm that these findings were not a mere coincidence. Consequently, the significant value (p-value) was *0.013 < (α) 0.05*, which indicated that there was a statistically significant correlation between the total number of bound morphemes used and the participants' marks. This is an effective indicator that the total number of bound morphemes was moderately linked to the quality of participants' writing. To elaborate this further, participants who used a higher number of bound morphemes obtained a better writing mark than those who utilized fewer bound morphemes in their essay. In this regard, Table 6 presents some examples of how the total number of bound morphemes correlated positively with the quality of participants' writing as reflected by their marks.

Table 6
The positive correlation between the total number of bound morphemes and students' marks

Participants' ID	Total number of bound morphemes	Participants' writing marks
2	116	19.75
23	85	18
18	62	17

The correlational statistical findings were supported by similar findings in the existing literature. For instance, Myhill (2008) and Dobbs (2013) found out that students of poor writing grades tended to use fewer bound morphemes compared to those who used a higher number of morphemes in their writing. Consistent with such an account, Bahr et al. (2012) mentioned that the impact of morphological awareness on students' writing is evidently present in the way they manipulate written language more precisely to achieve better writing. In a similar vein, the present study results were harmonious with those averred by Northey et al. (2015) who concluded that the density of using morphemes as well as learners' morphological understanding were recognized as predictors of the writing quality of students.

Qualitative findings and discussion
RQ3: What are the perceptions of English teachers regarding the challenges of using derivational and inflectional morphemes in grade 10 students' essay writing?

The third research question explored the perceptions of English teachers regarding the challenges of using bound morphemes in students' essays. Semi-structured interviews were utilized to answer this research question. This section reports and discusses the qualitative findings, which were analyzed using thematic analysis and grouped into relevant themes as follows.

EFL learners' morphological awareness
Most English teachers reported that the main challenge regarding using morphemes was that students had almost little to no awareness of bound morphemes since they did not study them explicitly as a separate skill. In this regard, one participants mentioned that "Grade 10 students do not study morphemes as part of their English curriculum, but they have some basic awareness about them from their primary education when they were used to study parts of speech and some grammar aspects such as verb tenses, singular and plural, and comparative forms of adjectives." However, another participant stated that students use bound morphemes unconsciously in their writing due to the increased amount of writing practice they have regularly. However, they are not explicitly introduced to them as part of the curriculum unless

they make mistakes related to word form, verb tense, singular and plural nouns, and comparative and superlative forms of adjectives that require their teachers to correct these mistakes for them.

Decontextualization of teaching morphemes

All participants claimed that curriculum design and the teaching approaches at school tended to avoid teaching morphemes explicitly. In this regard, one participant argued that "The focus at school is directed to teaching literature and reading skills, academic writing essays, and a small portion is given to teaching grammar and lexis." Another participant concurred that "Teaching grammar skills focuses mostly on the topics that help students improve their writing skills such as types of sentences, phrases, clauses, sentence structures, etc. Meanwhile, teaching vocabulary focuses on synonyms, antonyms and word use." Despite all this, all participants averred that bound morphemes were not taught either implicitly or explicitly as part of the English curriculum, and students relied on their prior knowledge of word formation and structure from their early stages of their primary years of education. However, a few participants added that vocabulary and grammar skills were taught separately without contextualizing them. Therefore, students did not relate well to these skills in a way that helped them to develop their morphological awareness.

Difficulties using morphemes

The main challenge that was reported by all participants regarding the use of bound morphemes in learners' essays was that students had a lack of awareness of base words and affixation (suffixes and prefixes) due to many reasons. To elaborate this further, some participants confirmed that, "The teaching materials do not cover aspects of morphology at any stage of the curriculum design due to ignorance of teachers' voice regarding what students need to study and focus on while designing the English curriculum." This was supported by another participant who stated that "There is nearly no intention from the head of curriculum to increase students' morphological awareness assuming that they are not in need to develop this type of understanding at the moment." Besides, lack of teacher training on how to help students acquire and develop morphological awareness was communicated by all participants as a major barrier of using bound morphemes for EFL Arab learners of grade 10. In addition, most participants stated that the existing differences in derivation and inflection between students' second language (L2 English) and their mother language (L1 Arabic) was a great obstacle in acquiring and using morphemes properly and extensively in their writing.

In the same respect, another participant reported that derivational morphemes had constraints on word formation, which limited productivity of an affix. For instance, the affix -able seems to be very productive since it is added to many base verbs to form new adjectives including manageable and moveable yet, it becomes problematic if added to base verbs such as study and arrive. As such, these limitations and constraints caused extreme difficulties to learn and use morphemes for L2 learners. A final challenge identified by all participants was that "Teachers are not encouraged to conduct morphological analysis of students' word formation and structure that would result in developing and improving their weaknesses regarding use of morphemes in their academic writing."

Recommendations regarding using morphemes

In the last part of the interview, English teachers were asked to share their thoughts and recommendations in terms of how to overcome the challenges related to students' use of morphemes in their writing. One participant mentioned that teaching morphemes should be explicit like other language skills as it would increase students' vocabulary size and provide a variety of word forms. Another participant affirmed that teaching morphemes needed to be in context, and it should be part of teaching writing, vocabulary, and grammar. A third participant added that "curriculum designers are advised to incorporate teaching morphemes into the English curriculum at different educational stages due to its importance in language learning." However, most participants recommended providing training for English teachers on how to conduct morphological analysis and how to maximize the use of the results of such analysis to promote students' learning experience.

Discussion of the Qualitative Findings

The qualitative findings demonstrated that there were some barriers of using bound morphemes (both derivational and inflectional) as reported by English teachers. These challenges incorporated the lack of teacher training and preparation to teach these morphemes for grade 10 Arab EFL students. In addition, the English curriculum did not include teaching morphemes yet, students relied on their morphological understanding from their early stages of education. The explicit difference between students' mother tongue (L1 Arabic) and second language (L2 English) in terms of morpheme acquisition was another main difficulty for students. This was reflected in the way in which grading morphemes was not included in the writing rubric.

These findings were supported by previous studies including Al-Haydan (2020) and Cao (2022) who consented that morphological awareness received little to no attention since it was not integrated in English textbooks. Similarly, Justi et al. (2023) believed that lack of students' morphological understanding was an indicator of their improper preparedness to utilize these morphemes to develop their language skills and competence. In harmony with these findings, Badawi (2019)

recommended that morphological awareness has to be a basic part of EFL books at school to raise students' awareness and help them to overcome the obvious difficulties that they have with regard to using morphemes.

Conclusion and Recommendations
Summary and main findings

The purpose of the study is twofold; to investigate the impact of derivational and inflectional morphemes on improving the quality of EFL Arab students' writing, and to explore the perceptions of English teachers regarding the challenges of using these morphemes properly in essay writing. The current study's significance originates from the fact that there are few studies that have explored the acquisition of bound morphemes and their association with students' written essays, more particularly for Arab EFL learners (Alotaibi, 2016; Wahid & Farooq, 2019). The present study employed the phenomenological mixed methods approach to answer all three research questions. Quantitative descriptive statistics and quantitative correlational statistics were used to find the frequency of derivational and inflectional morphemes and the correlation between the total number of bound morphemes and the writing quality respectively. However, semi-structured interviews were used to explore English teachers' perceptions of the challenges of utilizing these morphemes into students' writing.

The findings of the study indicated that the frequency of inflectional morphemes was higher than that of derivational morphemes in students' writing. In addition, the results showed that there was a moderate positive correlation between the overall number of morphemes used and the quality of students' writing. However, the qualitative findings demonstrated a number of challenges that students encountered regarding the use of morphemes including lack of teacher training, the exclusion of teaching morphemes from the English curriculum, the differences between learners' L1 (Arabic) and L2 (English) in terms of the way morphemes are structured and the lack of morphological awareness among students.

Limitations

There are some limitations of the current study such as limiting the study and participants to one context, which is a private school in the UAE. Therefore, the results of the study cause some barriers for generalizability. Another limitation is the sampling choice which is based on convenience sampling only. This creates some bias, unlike adopting random sampling which tends to avoid being biased. Moreover, employing manual annotation to find out the number of bound morphemes used is considered a weakness of the present study. It would be more effective and reliable if the researchers used automated software that would result in more accurate results in this regard.

Recommendations and implications

One recommendation of the current study is for curriculum specialists to reconsider incorporating resources to teach morphology into the English curriculum due to its positive relatedness to various language skills of students. Another recommendation is for English teachers to focus on teaching morphemes in their daily lesson planning through designing activities that would enhance students' morphological awareness and understanding. A final recommendation is for professional development teams at schools to provide training for English teachers on how to teach morphology to students in a way that would lead to raising their awareness.

The present study houses valuable implications at the pedagogical and the conceptual or theoretical level. To elaborate this further, there are some pedagogical implications for the teaching of English presented in this study as well as some conceptual and theoretical insights into morphology, morphemes, and morphological awareness. In line with the findings of the current study, teachers of EFL are expected to find the relevant information they need to design lessons adequately to meet the needs of their learners regarding using morphemes to enhance their writing skills capabilities as well as to promote their morphological understanding.

In addition, English language and writing classes should incorporate exercises on proper instruction and word formation into their teaching resources. Teachers should also help students with their word-formation on an individual basis to meet their learners' needs. In this regard, word formation guidelines in English might be helpful to students, and teaching students proper morphology will improve their writing skills. On the conceptual and theoretical level, the present study comes as a validation of the structuralism learning theory and the behaviorism learning theory, which underpin the current study, since the written essays of students were analyzed, and the results confirmed how the use of bound morphemes positively affected the writing quality of students.

All things considered, future studies should focus on investigating the impact of sub-categories of derivational and inflectional morphemes separately to examine if there is a significant impact of each of these sub-categories on improving the quality of writing. Moreover, future studies should consider extending the study context to include different schools and a larger sample of participants. Furthermore, more in-depth qualitative research is required to

further investigate the most effective measures of overcoming the challenges faced by L2 learners regarding the use of morphemes in their writing.

REFERENCES

1. Al-Haydan, D. Y. A. (2020). The Effects of Morphological Awareness on EFL Secondary School Students' Reading Comprehension Skills. International Journal of Education and Literacy Studies, 8(3), 48. https://doi.org/10.7575/aiac.ijels.v.8n.3p.48

2. Allen, A. A., & Lembke, E. S. (2020). The Effect of a Morphological Awareness Intervention on Early Writing Outcomes. Learning Disability Quarterly, 45(2), 72–84. https://doi.org/10.1177/0731948720912414

3. Alotaibi, A. M. (2016). The Use of Inflectional Morphemes by Kuwaiti EFL Learners. English Language and Literature Studies, 6(3), 32. https://doi.org/10.5539/ells.v6n3p32

4. Alsubaiai, H. S. (2021). The Correlation between Old and New Linguistic Paradigms: A Literature Review Based on Kuhn's School of Thoughts. English Language Teaching, 14(10), 84. https://doi.org/10.5539/elt.v14n10p84

5. Anglin, J. M., Miller, G. A., & Wakefield, P. C. (1993). Vocabulary Development: A Morphological Analysis. Monographs of the Society for Research in Child Development, 58(10), i. https://doi.org/10.2307/1166112

6. Apel, K. (2014). A Comprehensive Definition of Morphological Awareness. Topics in Language Disorders, 34(3), 197–209. https://doi.org/10.1097/tld.0000000000000019

7. Apuke, O. D. (2017). Quantitative Research Methods : A Synopsis Approach. Kuwait Chapter of Arabian Journal of Business and Management Review, 6(11), 40–47. https://doi.org/10.12816/0040336

8. Badawi, M. (2019). The Effect of Explicit English Morphology Instruction on EFL Secondary School Students' Morphological Awareness and Reading Comprehension. English Language Teaching, 12(4), 166. https://doi.org/10.5539/elt.v12n4p166

9. Bae, H. (2016). Morphological awareness in reading comprehension: A secondary analysis. English Language Teaching, 28(3), 1–18. https://doi.org/10.17936/pkelt.2016.28.3.001

10. Bahr, R. H., Silliman, E. R., Berninger, V. W., & Dow, M. (2012). Linguistic Pattern Analysis of Misspellings of Typically Developing Writers in Grades 1–9. Journal of Speech, Language, and Hearing Research, 55(6), 1587–1599. https://doi.org/10.1044/1092-4388(2012/10-0335)

11. Berko, J. (1958). The child's learning of English morphology. Word, 14(2-3), 150-177. https://doi.org/10.1080/00437956.1958.11659661

12. Bowers, P. N., & Kirby, J. R. (2009). Effects of morphological instruction on vocabulary acquisition. Reading and Writing, 23(5), 515–537. https://doi.org/10.1007/s11145-009-9172-z

13. Broc, L., Bernicot, J., Olive, T., Favart, M., Reilly, J., Quémart, P., & Uzé, J. (2013). Lexical spelling in children and adolescents with specific language impairment: Variations with the writing situation. Research in Developmental Disabilities, 34(10), 3253–3266. https://doi.org/10.1016/j.ridd.2013.06.025

14. Cao, P. (2022). Distinction and Examples of Morpheme, Morph and Allomorph in English Linguistics Teaching. In 2nd International Conference on Education: Current Issues and Digital Technologies (ICECIDT 2022) (pp. 323-331). Atlantis Press. https://www.atlantis-press.com/proceedings/icecidt-22/125976660

15. Carstairs-McCarthy, A. (1992). Morphology: Word structure in generative grammar. Lingua, 86(4), 355–359. https://doi.org/10.1016/0024-3841(92)90069-u

16. Cohen-Mimran, R., Reznik-Nevet, L., Gott, D., & Share, D. L. (2022). Preschool morphological awareness contributes to word reading at the very earliest stages of learning to read in a transparent orthography. Reading and Writing. https://doi.org/10.1007/s11145-022-10340-z

17. Colé, P., Cavalli, E., Duncan, L. G., Theurel, A., Gentaz, E., Sprenger-Charolles, L., & El-Ahmadi, A. (2018). What Is the Influence of Morphological Knowledge in the Early Stages of Reading Acquisition Among Low SES Children? A Graphical Modeling Approach. Frontiers in Psychology, 9. https://doi.org/10.3389/fpsyg.2018.00547

18. Cox, T. D. (2008). Adult Learners and Foreign Language Acquisition: A Behaviourist Analysis. The International Journal of Learning: Annual Review, 15(1), 33–36. https://doi.org/10.18848/1447-9494/cgp/v15i01/45570

19. Creswell, J. W., & Poth, C. N. (2016). Qualitative inquiry and research design: Choosing among five approaches. Sage publications.

20. Creswell, J. W., & Tashakkori, A. (2007). Editorial: Differing Perspectives on Mixed Methods Research. Journal of Mixed Methods Research, 1(4), 303–308. https://doi.org/10.1177/1558689807306132

21. Crossley, S. (2020). Linguistic features in writing quality and development: An overview. Journal of Writing Research, 11(vol. 11 issue 3), 415–443. https://doi.org/10.17239/jowr-2020.11.03.01

22. Cubit, K., & Lopez, V. (2011). Qualitative study of Enrolled Nurses transition to Registered Nurses. Journal of Advanced Nursing, 68(1), 206–211. https://doi.org/10.1111/j.1365-2648.2011.05729.x

23. De Saussure, F., Bally, C., Sechehaye, A., Reidlinger, A., & Baskin, W. (1960). Course in General Linguistics. The Journal of American Folklore, 73(289), 274. https://doi.org/10.2307/538001

24. Deacon, S. H., Kieffer, M. J., & Laroche, A. (2014). The Relation Between Morphological Awareness and Reading Comprehension: Evidence From Mediation and Longitudinal Models. Scientific Studies of Reading, 18(6), 432–451. https://doi.org/10.1080/10888438.2014.926907

25. Derwing, T. M., Munro, M. J., & Wiebe, G. (1998). Evidence in Favor of a Broad Framework for Pronunciation Instruction. Language Learning, 48(3), 393–410. https://doi.org/10.1111/0023-8333.00047

26. DeSantis, L., & Ugarriza, D. N. (2000). The Concept of Theme as Used in Qualitative Nursing Research. Western Journal of Nursing Research, 22(3), 351–372. https://doi.org/10.1177/019394590002200308

27. Desrochers, A., Manolitsis, G., Gaudreau, P., & Georgiou, G. (2018). Early contribution of morphological awareness to literacy skills across languages varying in orthographic consistency. Reading and Writing, 31(8), 1695–1719. https://doi.org/10.1007/s11145-017-9772-y

28. Dobbs, C. L. (2013). Signalling organization and stance: academic language use in middle grade persuasive writing. Reading and Writing, 27(8), 1327–1352. https://doi.org/10.1007/s11145-013-9489-5

29. Dulaney, D. E., Staats, A. W., & Staats, C. K. (1965). Complex Human Behavior: A Systematic Extension of Learning Principles. The American Journal of Psychology, 78(3), 522. https://doi.org/10.2307/1420599

30. Fantino, E., & Staddon, J. E. R. (1985). Adaptive Behavior and Learning. The American Journal of Psychology, 98(2), 325. https://doi.org/10.2307/1422461

31. Farran, L. K., Bingham, G. E., & Matthews, M. W. (2011). The relationship between language and reading in bilingual English-Arabic children. Reading and Writing, 25(9), 2153–2181. https://doi.org/10.1007/s11145-011-9352-5

32. Fejzo, A. (2015). The contribution of morphological awareness to the spelling of morphemes and morphologically complex words in French. Reading and Writing, 29(2), 207–228. https://doi.org/10.1007/s11145-015-9586-8

33. Fitria, T. N. (2020). An Analysis of Derivational and Inflectional Morpheme in Selected News From Tempo. Co. Rainbow: Journal of Literature, Linguistics and Cultural Studies, 9(2), 146–155. https://doi.org/10.15294/rainbow.v9i2.40348

34. Fleming, J. (2018). Recognizing and Resolving the Challenges of Being an Insider Researcher in Work-Integrated Learning. International Journal of Work-Integrated Learning, 19(3), 311-320. https://www.ijwil.org/files/IJWIL_19_3_311_320.pdf

35. Flick, U. (2018). An introduction to qualitative research (6th ed). London, Sage Publications Ltd.

36. Giazitzidou, S., & Padeliadu, S. (2022). Contribution of morphological awareness to reading fluency of children with and without dyslexia: evidence from a transparent orthography. Annals of Dyslexia, 72(3), 509–531. https://doi.org/10.1007/s11881-022-00267-z

37. Giazitzidou, S., Mouzaki, A., & Padeliadu, S. (2023). Pathways from morphological awareness to reading fluency: the mediating role of phonological awareness and vocabulary. Reading and Writing. https://doi.org/10.1007/s11145-023-10426-2

38. Ginsberg, D., Honda, M., & O'Neil, W. (2011). Looking Beyond English: Linguistic Inquiry for English Language Learners. Language and Linguistics Compass, 5(5), 249–264. https://doi.org/10.1111/j.1749-818x.2011.00271.x

39. Görgen, R., De Simone, E., Schulte-Körne, G., & Moll, K. (2021). Predictors of reading and spelling skills in German: the role of morphological awareness. Journal of Research in Reading, 44(1), 210–227. https://doi.org/10.1111/1467-9817.12343

40. Green, L., McCutchen, D., Schwiebert, C., Quinlan, T., Eva-Wood, A., & Juelis, J. (2003). Morphological Development in Children's Writing. Journal of Educational Psychology, 95(4), 752–761. https://doi.org/10.1037/0022-0663.95.4.752

41. Haase, A., & Steinbrink, C. (2022). Associations between morphological awareness and literacy skills in German primary school children: the roles of grade level, phonological processing and vocabulary. Reading and Writing, 35(7), 1675–1709. https://doi.org/10.1007/s11145-021-10247-1

42. Halcomb, E. J. (2018). Mixed methods research: The issues beyond combining methods. Journal of Advanced Nursing, 75(3), 499–501. https://doi.org/10.1111/jan.13877

43. Harris, J. W. (1980). Nonconcatenative morphology and Spanish plurals. Indiana University Linguistics Club.

44. Hockett, C. F. (1947). Problems of Morphemic Analysis. Language, 23(4), 321. https://doi.org/10.2307/410295

45. Javadi, M., & Zarea, K. (2016). Understanding Thematic Analysis and its Pitfall. Journal of Client Care, 1(1). https://doi.org/10.15412/j.jcc.02010107

46. Justi, F. R. D. R., de Oliveira, B. S. F., & Justi, C. N. G. (2023). The relationship between morphological awareness and word reading in Brazilian Portuguese: a longitudinal study. Psicologia: Reflexão E Crítica, 36(1). https://doi.org/10.1186/s41155-022-00245-9

47. Karimi, M. N. (2012). Enhancing L2 Students' Listening Transcription Ability Through a Focus on Morphological Awareness. Journal of Psycholinguistic Research, 42(5), 451–459. https://doi.org/10.1007/s10936-012-9227-1

48. Khoshkhoonejad, A., Farid Khalifelu, S., & Abdipour, S. (2016). Exploring the Effect of Morphological Instruction on Vocabulary Learning among Iranian EFL Learners. Journal of Education and Learning (EduLearn), 10(2), 151–158. https://doi.org/10.11591/edulearn.v10i2.3316

49. Kieffer, M. J., & Lesaux, N. K. (2011). Development of morphological awareness and vocabulary knowledge in Spanish-speaking language minority learners: A parallel process latent growth curve model. Applied Psycholinguistics, 33(1), 23–54. https://doi.org/10.1017/s0142716411000099

50. Kirby, J. R., Deacon, S. H., Bowers, P. N., Izenberg, L., Wade-Woolley, L., & Parrila, R. (2011). Children's morphological awareness and reading ability. Reading and Writing, 25(2), 389–410. https://doi.org/10.1007/s11145-010-9276-5

51. Kridel, C. (2008). What is Curriculum Studies? As Others See the Field. Journal of Curriculum and Pedagogy, 5(2), 22–23. https://doi.org/10.1080/15505170.2008.10411696

52. Kuo, L. J., & Anderson, R. C. (2006). Morphological Awareness and Learning to Read: A Cross-Language Perspective. Educational Psychologist, 41(3), 161–180. https://doi.org/10.1207/s15326985ep4103_3

53. Kvåle, K. (2007). Do cancer patients always want to talk about difficult emotions? A qualitative study of cancer inpatients communication needs. European Journal of Oncology Nursing, 11(4), 320–327. https://doi.org/10.1016/j.ejon.2007.01.002

54. Larrivée, P. (1995). [no title] - Stephen R. Anderson. A-Morphous Morphology. In the series Cambridge Studies in Linguistics 62. Cambridge: Cambridge University Press. 1992. Pp. xiv + 434. Canadian Journal of Linguistics/Revue Canadienne De Linguistique, 40(3), 360–362. https://doi.org/10.1017/s0008413100016042

55. Levesque, K. C., Breadmore, H. L., & Deacon, S. H. (2021). How morphology impacts reading and spelling: advancing the role of morphology in models of literacy development. Journal of Research in Reading, 44(1), 10–26. https://doi.org/10.1111/1467-9817.12313

56. Lieber, R. (2009). Introducing morphology. Cambridge University Press.

57. Mackenzie, J. L. (2011). Review of Bornkessel-Schlesewsky and Matthias Schlesewsky (2009): Processing syntax and morphology: a neurocognitive perspective. Functions of Language, 18(2), 275–284. https://doi.org/10.1075/fol.18.2.07mac

58. Majid, M. A. A., Othman, M., Mohamad, S. F., Lim, S. A. H., & Yusof, A. (2017). Piloting for Interviews in Qualitative Research: Operationalization and Lessons Learnt. International Journal of Academic Research in Business and Social Sciences, 7(4). https://doi.org/10.6007/ijarbss/v7-i4/2916

59. Maniski, T. (2000). Book Review: Interfaces between second language acquisition and language testing research, Cambridge Applied Linguistics Series. Language Teaching Research, 4(1), 83–86. https://doi.org/10.1177/136216880000400105

60. Marantz, A., & Jensen, J. T. (1992). Morphology: Word Structure in Generative Grammar. Language, 68(2), 413. https://doi.org/10.2307/416954

61. Marjokorpi, J. (2023). The relationship between grammatical understanding and writing skills in Finnish secondary L1 education. Reading and Writing. https://doi.org/10.1007/s11145-022-10405-z

62. Masrai, A. M. (2016). The influence of morphological knowledge on lexical processing and acquisition: The case of Arab EFL learners. Ampersand, 3, 52–60. https://doi.org/10.1016/j.amper.2016.04.001

63. Matruglio, E. (2020). What two teachers took up: metalanguage, pedagogy and potentials for long-term change. Language and Education, 35(5), 463–478. https://doi.org/10.1080/09500782.2020.1825477

64. McCutchen, D., & Logan, B. (2011). Inside Incidental Word Learning: Children's Strategic Use of Morphological Information to Infer Word Meanings. Reading Research Quarterly, 46(4), 334–349. https://doi.org/10.1002/rrq.003

65. McCutchen, D., Green, L., & Abbott, R. D. (2008). Children's Morphological Knowledge: Links to Literacy. Reading Psychology, 29(4), 289–314. https://doi.org/10.1080/02702710801982050

66. McKim, C. A. (2016). The Value of Mixed Methods Research. Journal of Mixed Methods Research, 11(2), 202–222. https://doi.org/10.1177/1558689815607096

67. Morse, J. M. (2009). Mixing Qualitative Methods. Qualitative Health Research, 19(11), 1523–1524. https://doi.org/10.1177/1049732309349360

68. Mousikou, P., Beyersmann, E., Ktori, M., Javourey-Drevet, L., Crepaldi, D., Ziegler, J. C., Grainger, J., & Schroeder, S. (2020). Orthographic consistency influences morphological processing in reading aloud: Evidence from a cross-linguistic study. Developmental Science, 23(6). https://doi.org/10.1111/desc.12952

69. Myhill, D. (2008). Towards a Linguistic Model of Sentence Development in Writing. Language and Education, 22(5), 271–288. https://doi.org/10.1080/09500780802152655

70. Northey, M., McCutchen, D., & Sanders, E. A. (2015). Contributions of morphological skill to children's essay writing. Reading and Writing, 29(1), 47–68. https://doi.org/10.1007/s11145-015-9579-7

71. Oz, H. (2014). Morphological Awareness and Some Implications for English Language Teaching. Procedia - Social and Behavioral Sciences, 136, 98–103. https://doi.org/10.1016/j.sbspro.2014.05.296

72. Ozanne, J. L., Strauss, A., & Corbin, J. (1992). Basics of Qualitative Research. Journal of Marketing Research, 29(3), 382. https://doi.org/10.2307/3172751

73. Perfetti, C. (2007). Reading Ability: Lexical Quality to Comprehension. Scientific Studies of Reading, 11(4), 357–383. https://doi.org/10.1080/10888430701530730

74. Rejeki, S. (2017). Approach and Methods on TEFL: Inquiry-Based Language Learning (IBLL). ENGLISH FRANCA : Academic Journal of English Language and Education, 1(2), 135. https://doi.org/10.29240/ef.v1i2.154

75. Rugaiyah, R. (2018). Derivational and Inflectional Morphemes: A Morphological Analysis. J-SHMIC : Journal of English for Academic, 5(2), 73–85. https://doi.org/10.25299/jshmic.2018.vol5(2).1887

76. Saeidi, M., & Mirzapour, F. (2013). The Impact of Morphological Awareness on Iranian University Students' Listening Comprehension Ability. International Journal of Applied Linguistics & English Literature, 2(3), 69–74. https://doi.org/10.7575/aiac.ijalel.v.2n.3p.69

77. Saiegh-Haddad, E., & Geva, E. (2007). Morphological awareness, phonological awareness, and reading in English–Arabic bilingual children. Reading and Writing, 21(5), 481–504. https://doi.org/10.1007/s11145-007-9074-x

78. Sarfraz, S. & Abbas, U. (2018). Effectiveness of morphological awareness in English writing composition of Pakistani students at the undergraduate level-case study. Journal of Education and Practices, 9(19), pp.78-84. https://core.ac.uk/download/pdf/234641795.pdf

79. Simpson, I. C., Moreno-Pérez, F. J., Rodríguez-Ortiz, I. D. L. R., Valdés-Coronel, M., & Saldaña, D. (2019). The effects of morphological and syntactic knowledge on reading comprehension in spanish speaking children. Reading and Writing, 33(2), 329–348. https://doi.org/10.1007/s11145-019-09964-5

80. Stonham, J. (2007). [Review of the book What Is Morphology? by Mark Aronoff, Kristen Fudeman]. Modern Language Review 102(1), 177- 178. https://doi:10.1353/mlr.2007.0169.

81. Sun, X., Marks, R. A., Zhang, K., Yu, C., Eggleston, R. L., Nickerson, N., Chou, T., Hu, X., Tardif, T., Satterfield, T., & Kovelman, I. (2022). Brain bases of English morphological processing: A comparison between Chinese-English, Spanish-English bilingual, and English monolingual children. Developmental Science, 26(1). https://doi.org/10.1111/desc.13251

82. Taha, H., & Saiegh-Haddad, E. (2016). Morphology and Spelling in Arabic: Development and Interface. Journal of Psycholinguistic Research, 46(1), 27–38. https://doi.org/10.1007/s10936-016-9425-3

83. Tahaineh, Y. (2012). The Awareness of the English Word-formation Mechanisms is a Necessity to Make an Autonomous L2 Learner in EFL Context. Journal of Language Teaching and Research, 3(6). https://doi.org/10.4304/jltr.3.6.1105-1113

84. Tavallali, P., Razavi, M., & Brady, S. (2017). A non-linear data mining parameter selection algorithm for continuous variables. PLOS ONE, 12(11), e0187676. https://doi.org/10.1371/journal.pone.0187676

85. Templeton, S. (2012). Teaching and Learning Morphology: A Reflection on Generative Vocabulary Instruction. Journal of Education, 192(2–3), 101–107. https://doi.org/10.1177/0022057412192002-312

86. Vressick-Chilborn, S., & Rachman, M. O. (2020). Syntactic structure, morphology, free morphemes and bound morphemes. Macrolinguistics and Microlinguistics, 1(2), 85–92. https://doi.org/10.21744/mami.v1n2.8

87. Wahid, R., & Farooq, O. (2019). The Influence of Derivational and Inflectional Morphological Awareness on the Writing of Undergraduate EFL Students: An Empirical Study. Arab World English Journal, 10(1), 242–258. https://doi.org/10.24093/awej/vol10no1.21

88. Watkins, D. C. (2012). Qualitative Research. Health Promotion Practice, 13(2), 153–158. https://doi.org/10.1177/1524839912437370

89. Wibowo, A. (2016). The gain of inflectional morphemes in students' essay at the third semester of English education program of education. Jurnal Pendidikan, 4(1), 1-7. https://unimuda.e-journal.id/jurnalpendidikan/article/view/160

90. Wolter, J. A., & Green, L. (2013). Morphological Awareness Intervention in School-Age Children With Language and Literacy Deficits. Topics in Language Disorders, 33(1), 27–41. https://doi.org/10.1097/tld.0b013e318280f5aa

91. Yule, G. (2010). The study of language (4th ed). New York, Cambridge university press. https://sharifling.files.wordpress.com/2018/09/the-study-of-language-george-yule.pdf

92. Yusuf, A. (2017). Different criteria between derivational and inflectional morphemes in English. Education and Human Development Journal, 2(2). https://doi.org/10.33086/ehdj.v2i2.1377

93. Zhang, D., & Koda, K. (2013). Morphological awareness and reading comprehension in a foreign language: A study of young Chinese EFL learners. System, 41(4), 901–913. https://doi.org/10.1016/j.system.2013.09.009

94. Ziafar, M., & Namaziandost, E. (2019). From Behaviourism to New Behaviourism: A Review Study. Loquen: English Studies Journal, 12(2), 109. https://doi.org/10.32678/loquen.v12i2.2378

Appendices
Appendix A: Semi-structured interview questions for English teachers

1. How do grade 10 students learn about inflectional and derivational morphemes? What resources are available for them to use?

2. What are the most commonly used morphemes in grade 10 students' academic essay writing? Why is this the case?

3. What is more effective for students, teaching derivational and inflectional morphemes separately or as context-based? Which technique has a greater impact on the quality of grade 10 students' essay writing?

4. How do English teachers ensure including a criterion for grading the use of derivational and inflectional morphemes in the academic writing rubric?

5. How effective is the grading process as a reflection of students' morphological awareness?

6. In your perception, does the use of derivational and inflectional morphemes have an impact on improving grade 10 students' essay writing? How?

7. Is teaching morphemes integrated in the design of curriculum of the English subject at school? How?

8. How often do grade 10 students have mistakes in utilizing inflectional and derivational morphemes in their writing? What barriers do grade 10 students encounter?

9. What recommendations can you provide to them so that they can overcome these challenges?

Appendix B: The Writing Task

Writing (W)   (20 marks)

<u>Write a well-organized 4 paragraphs Personal Narrative Essay that consists of introduction, two body paragraphs, and a conclusion about ONE of the following topics.</u>

<u>Topic A</u>: In life we all have something that has changed the way we perceive things. Most things that change a person's perception happens to be an experience that they have gone through and learned from. <u>**Write a cohesive and coherent essay to**</u> share your personal stories with others, enlighten, and inspire the audience with information gained from real life experiences.

<u>Topic B:</u>

Have you ever witnessed something that you will remember for the rest of your life?
Describe this incident and how it changed your life. <u>**Write a cohesive and coherent essay to show how this experience has fundamentally changed the way you see the world and your view towards people in a good or bad way.**</u>

*Note: Include a <u>**HOOK, SET THE SCENE**</u> and <u>**THESIS STATEMENT**</u> in your introduction. Develop your paragraphs with <u>**TOPIC SENTENCES**</u> and <u>**SUPPORTING DETAILS**</u>. End your writing with a strong <u>**CONCLUSION THAT INCLUDES YOUR FINAL THOUGHT.**</u>

Appendix C: Holistic Writing Rubric

Standards: W 10.4, W 10.5, W 10.6, W.10.1.A, W.10.2.A, W.10.10.B, W.10.2.D
Rubric for Personal Narrative Essay

Criteria of evaluation	Excellent	Very good	Developing	Inadequate
Narrative techniques				
Introduction engages the reader immediately. 3pts/_____	Introduction engages the reader with a clever beginning.	Introduction only partially develops clever beginning.	Introduction is dull but relevant to narrative	Introduction is dull.
Details in introduction set the scene. 2 pts/_____	Specific details in the introduction set the scene, creating a vivid picture of when and where the experience happened.	Details in introduction set the scene but are somewhat general.	Introduction partially sets the scene, telling only where or when the experience happened.	Introduction does not set the scene.
First-person point of view is consistent	First-person point of view is clear and consistent	First-person point of view is consistent in most parts	A few noticeable shifts from first-	Point of view is not clear, or it frequently shifts, confusing the reader.
Conclusion states why the experience is meaningful. 2pts/_____	Conclusion clearly states why the experience is meaningful, including how it changed the writer or what it taught the writer	Conclusion states why the experience is meaningful, but the connection between the experience and the stated reason is somewhat general.	Conclusion mentions why the experience is meaningful, but the connection to the events is not clear to the reader.	Conclusion does not mention why the experience is meaningful.
Essay				
Focus and details. 2pts/_____	There is one clear, well focused topic. Main ideas are clear and are well supported by detailed and accurate information.	There is one clear, well focused topic. Main ideas are clear but are not well supported by detailed information.	There is one topic. Main ideas are somewhat clear.	The topic and main ideas are not clear.
Organization 2pts/_____	The introduction is inviting, states the main topic, and provides an overview of the paper. Information is relevant and presented in a logical order. The conclusion is strong.	The introduction states the main topic and provides an overview of the paper. A conclusion is included.	The introduction states the main topic. A conclusion is included.	There is no clear introduction, structure, or conclusion.
Transitional Phrases 1pt/ _____	Well-chosen transitional words connect the events, strengthening coherence throughout the narrative.	Transitional words often connect the events, strengthening coherence in most parts of the narrative.	Transitional words seldom connect the events, or some transitions are inappropriate.	Transitional words are not used.

Appendix D: Samples of students' writing

time, I was drowning in my thoughts; overthinking. I later decided to be honest with them. It was Monday, we had a free class that day. I came up to them and asked: "Why do you guys dislike me that much?". The only thing they told me was: "I'm sorry but we do not really like your personality." At that time, I seemed understanding to them, but deep inside I was crying out loud. That sadness led me to take the decision of changing myself.

After that day, going to school was hell for me. I was too lonely and insecure. I had no friends or someone to talk to. I sat alone at lunch, and at home I used to write down everything I had to do to change myself to get them to accept me. After two months, I became a whole different person. I became way more like them. I was so not comfortable with me being like that, but I did not care. They accepted me and that was enough for me, till an extinct. Deep down I was in my lowest because I was not being me. I was fulfilling my interests. After some time, I was becoming depressed. Everything in my life was becoming worse. My grades, my relationship with my parents, my self love; they all dropped down. At that time, I never regretted anything more. It was Tuesday and we had a party, I was with them as usual, with a mask on my face; painted a smile. However, they were pleasant with me that way. I remembered how much I was struggling and I just could not hold it in anymore. I cried out loud. Everyone asked me what is wrong. I never told them. After this , I distanced myself from them and I stopped being friends with them. Yes I was lonely, but loneliness never felt that good before. I was feeling so good because I had time for myself to return to the way I truly am. After a year, I changed my school and I met way better people there that liked me the way I am. I was the happiest person ever. _revise your sentences structure/ punctuation_

After all what I went through , I figured out that I have to be myself no matter what because if people didn't like me the way I am , they don't deserve to like me in any way. I also figured out that everything happens for a reason . If I didn't go through all of this , I would've stayed till now very insecure and I wouldn't know my value as I do now. Also I wouldn't meet my new friends now that I feel way better around , and make me feel really good about myself ,and they accept me in all my ways . Here am I after 3 years being Here am I after 4 years having the confidence that everyone needs, and having an amazing group of friends that love me the way I am. _good job_

inf 75
deri 28

8

corner, a huge group of students was pointing and laughing at me, which made me feel there is something wrong about me. In the break time, they were all eating american food like pancakes, peanut butter sandwiches while I was eating iraqi traditional breakfast. Those students came showing off and insulting me saying "hey you we dont want you in our school, as there is no place for non-native students". Okay, I accept that I was different, because our family never lived in the US ever, but my expectation was they would accept me despite the differences. Neither the students did, nor the teachers did, as it turned out that discriminating was a hobby to them. My eyes welled up with tears as I wanted this day to end as soon as possible. Was I sad, nervous, or scared? I never knew that. This day taught me that my silence and letting them discriminate against me was a huge mistake.

Do you think i fighted discrimination? How did it affect me or any victim of discrimination? What lessons were learned from this? Let me tell you about it. My mistake taught me to go fight it, never be silent, and face them. After that day, the students kept insulting me, and saying the same things. "Well, you enjoy discriminating against people right? I will never let you do that to me or to anyone again. Thank you for that though, because you made me learn lessons that developed me". Facing them and resisting their discrimination to them made me comfortable. Discrimination had many effects on me or on any victim that experienced this. First, it makes the person way more stronger as they face it, and my experience shows this. When you go talk to them, be confident and just say whatever you want to say. Don't make my mistake and keep silent, as it will make you feel like you're an inferior. Second, learning not to listen or care to people's opinions that are just negative, and will not benefit you anything was one of the most important lessons. Discrimination taught me to not let others opinion affect my self's worth and not letting my my life get controlled by them. I sat and thought with myself and said "look at me on the first day of school and now! how strong i became and how much i changed".

Discrimination is like dust, as it's everywhere and it's difficult to get rid of. Remember when I told you about how my story started? From that moment, lessons and morals accumulated, which made me a better person. Today is the 26th of november 2020, and I can say the suffering changed me, my mindset, and my life.

inf 62

deri 54⁸

Appendix E: A detailed frequency table of inflectional morphemes

Inflectional Morphems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	26	1	3.3	3.3	3.3
	32	2	6.7	6.7	10.0
	36	1	3.3	3.3	13.3
	39	1	3.3	3.3	16.7
	42	1	3.3	3.3	20.0
	43	2	6.7	6.7	26.7
	45	2	6.7	6.7	33.3
	48	1	3.3	3.3	36.7
	49	1	3.3	3.3	40.0
	50	1	3.3	3.3	43.3
	54	1	3.3	3.3	46.7
	55	1	3.3	3.3	50.0
	56	3	10.0	10.0	60.0
	57	1	3.3	3.3	63.3
	62	1	3.3	3.3	66.7
	63	1	3.3	3.3	70.0
	65	1	3.3	3.3	73.3
	68	1	3.3	3.3	76.7
	75	1	3.3	3.3	80.0
	76	1	3.3	3.3	83.3
	79	1	3.3	3.3	86.7
	80	1	3.3	3.3	90.0
	85	1	3.3	3.3	93.3
	90	1	3.3	3.3	96.7
	100	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

Appendix F: A detailed frequency table of derivational morphemes

Derivational Morphemes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	14	2	6.7	6.7	6.7
	17	1	3.3	3.3	10.0
	18	1	3.3	3.3	13.3
	19	1	3.3	3.3	16.7
	21	1	3.3	3.3	20.0
	24	1	3.3	3.3	23.3
	26	1	3.3	3.3	26.7
	27	2	6.7	6.7	33.3
	28	2	6.7	6.7	40.0
	30	1	3.3	3.3	43.3
	31	1	3.3	3.3	46.7
	32	1	3.3	3.3	50.0
	35	1	3.3	3.3	53.3
	36	1	3.3	3.3	56.7
	37	2	6.7	6.7	63.3
	39	1	3.3	3.3	66.7
	41	1	3.3	3.3	70.0
	42	1	3.3	3.3	73.3
	43	1	3.3	3.3	76.7
	44	1	3.3	3.3	80.0
	45	1	3.3	3.3	83.3
	48	1	3.3	3.3	86.7
	52	1	3.3	3.3	90.0
	54	1	3.3	3.3	93.3
	55	1	3.3	3.3	96.7
	61	1	3.3	3.3	100.0
	Total	30	100.0	100.0	

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