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Saudi undergraduate EFL learners' attitudes toward using textism in their academic writing

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Abstract

Textism, which refers to the special language used in text messaging, is widely used in several forms of communication, such as texting, online chatting and emails. This increased use of textism has alarmed the media and the public because this special language can impact the academic writing of the younger generation. This paper aimed at exploring the attitudes of undergraduate Saudi learners of English as a foreign language (EFL) toward using textism in their academic writing. (115) students of different levels of language proficiency completed a survey about the use of textism across several modalities and recipients. Additionally, (240) student essays were analyzed to identify the potential use of textism in student writing. The results showed that students are generally conscious of the appropriate contexts for the use of textism. However, when it comes to the actual use of textism in writing, low-proficient students tend to produce more textism than those who are at medium and high levels of writing competence.

Keywords: Attitudes, Textism, Writing, Arab, EFL

Introduction

Mobile phone use continues to increase dramatically around the globe. With this increase, texting has become the most popular form of technology-based communication for young adults (Lenhart, 2010). Text messages and other computer-mediated communication are characterized by their own form of language, which is largely known as textism (Grace et al., 2015; Rosen et al., 2010; Wood et al., 2011). Among the specific features of textism are: (1) using shortened words (e. g., *tues* in place of *Tuesday*), (2) removing some letters (e.g., *goin* for *going*), (3) inserting acronyms (e.g., *LOL*, *IMHO*), (4) using symbols instead of words (e.g., *&* instead of *and*), (5) deleting apostrophes (e.g., *dont* or *don't*), (6) creating emoticons (e.g.,) and (7) using punctuation marks to express the intensity of emotions (e.g., *I'M ANGRY*) (Rosen et al., 2010). These special features of textism have triggered fear concerning the future of writing, particularly among the younger generation. Some scholars (e.g., Boştină-Bratu, 2015; Sockett, 2014) warned that the younger generation will lose the ability to write acceptable English prose. Such worry spread across the media and led to the emergence of several media reports warning against the use of textism. In fact, it is widely claimed by the media that the expansion

of the use of textism in recent years has negatively impacted the quality of formal writing because its features are intrusively added to academic writing (Grace et al., 2015). In response to these warnings, other scholars rejected the pessimistic view that textism would hinder the development of the writing skill. Instead, the more optimistic scholars viewed textism as a helpful additional writing experience (Gorney, 2012; Waldrone et al., 2016).

Significance of the study

The current study contributes to this debate through examining the use of textism by Arab learners of English as a foreign language (EFL). We examined samples of their academic writing and their responses to a survey and explored in which contexts Arab EFL learners used textism. We also investigated whether the learners were aware of the restrictions of the use of textism with respect to different recipients and writing modalities. The study is significant for three reasons. First, it addresses a timely topic that is of a special significance with the new digital era. Second, it targets EFL learners who represent a large important population in today's world in which English is widely used as a *lingua franca*.

Theoretical background

A relevant theoretical model to the current study is the low-road/high-road model of teaching transfer (Saloman & Perkins, 1989). According to Saloman and Perkins (1989), students are expected to transfer their acquired skills, knowledge, attitudes, etc. to new relevant contexts. In other words, transfer goes beyond ordinary learning because the skill or knowledge in question has to travel to a new context. They distinguish between two different mechanisms of transfer: mainly, low-road and high-road. First, low-road transfer involves automatic triggering of well-practiced routines in one context to another context where there is considerable perceptual similarity. For example, one can drive a truck based on his/her command of riding a car. Second, high-road transfer involves the abstraction of skill or knowledge learned so that it can transfer to another context which shares no direct similarity. For example, a chess player may reflect on the control of the center strategy in chess in relation to a completely different context, such as a business, political, or military context.

Saloman and Perkins (1989) stressed the importance of these kinds of transfer to support learning and help achieve the intended educational goals. Hence, they supported designing instruction to meet the conditions needed to foster transfer. They also recommended adopting useful strategies for such a design. For example, they recommended that teachers should encourage learners to meet the resemblance conditions for no-road transfer, and train them on abstracting and making connections to foster high-road transfer. Despite this enthusiasm to teach for transfer, Saloman and Perkins (1989) acknowledged the possibility of transfer failure. That is, it is possible to fail to meet the conditions of practice to near automaticity. It is also possible to transfer the given skill/knowledge to a wrong context.

The study draws on the low-road/high-road model of teaching transfer because it fits its purposes. The questions arise: will students transfer their texting skills wrongly to their academic writing context? Will they fail to see the lack of resemblance between the

two contexts? Or will they be able to see that the two contexts do not match and, hence, do not lead to transfer of the features of textism?

Literature review

The increased use of text messages, emails and other forms of computer-mediated communication has triggered several studies regarding the nature of language used in these mediums (e.g., Farina & Lyddy, 2011; Lyddy et al., 2014) and the language learners' attitudes towards their use (e.g., Alqasham, 2022; Liu, 2022; Mahfouz, 2010). Focus has been particularly placed on the effect of textism on different language skills, particularly reading and grammar (e.g., Grace, 2014; Johnson, 2015; Kemp, 2010; Van Dijk et al., 2016; Verheijen, 2013). However, these studies will not be covered in this brief survey of the literature since our focus is on another aspect of textism; namely, the use of textism by undergraduate students in their academic writing and their attitudes toward using textism in different forms of writing. Studies have mainly targeted university students who are native speakers of English and have generally found out that university students are aware of the specific characteristics and uses of the language of text messaging. Additionally, the students distinguished between the way they write text messages and the language used in other writing tasks, such as formal letters and academic essays.

Further research on English-speaking university students was conducted by Rosen et al. (2010) and Grace et al. (2015). Rosen et al. (2010) investigated the effect of the reported daily use of textisms on the quality of writing in two studies. Participants in Study I wrote a formal letter to a company while participants in study II wrote a formal letter and an informal writing essay on happiness. In both studies, which involved (718) young adults, the participants reported how often they used linguistic/contextual textisms and instant messaging. The results revealed that textism was rarely used in formal writing. The results also showed negative correlations between textism and formal writing whereas the association between the textism and informal writing was positive. Interestingly, those relationships were moderated by gender and level of education with women with a college degree reporting spending more text messaging than did men with a college degree. As for the effect of college education, the study showed that formal writing of those without college education was more likely to be affected by the informal style of text messaging.

Likewise, Grace et al. (2015) conducted two studies to explore the potential relationships between the use of textism in daily communication and the production of formally written work by university students. In Study I, (86) Australian and (150) Canadian undergraduates completed a survey in which they rated the use of textism in various situations. Results showed the students' excellent awareness of the appropriate use of textism. The students adequately distinguished between the different writing modalities and different typing recipients. In the second study, the final exam papers of (153) Australian undergraduates were examined for the use of textism. The findings showed that textism was rarely used in the exam papers. Like Rosen et al. (2010), it turned out that university students are generally sensitive to the appropriate uses of textism with reference to recipients and writing modalities. In fact, students avoided the use of textism in final exams.

The above results strongly indicate that English-speaking university students avoid using textism in formal writing including exam papers. Hence, the question that arises is: What about non-native speakers of English? Do they show a similar sensitivity toward the appropriate use of textism? A few recent studies have attempted to address this question, but have yielded contradictory results. For example, Odey et al. (2014) examined Nigerian university students' use of textism in SMS messages and in their essays. The results showed that the students transferred the style of textism into the written essays, particularly in the form of vowel deletion, graphons, alphanumeric homophony, punctuation errors and initializations, among others. Like Odey et al. (2014), Saberi (2016) examined samples of formal writing by university students who were native and non-native speakers of English. The results failed to show any significant increase in using textism in formal writing by native speakers of English despite the notable increase in the use of textism in their daily communication. On the contrary, the results revealed an increase in the negative intrusions of textism in the formal writing of non-native English-speaking students.

Similarly, Al-Kadi (2019) examined the effect of textism on the academic writing performance of Yemeni EFL learners. Data was collected from both students and teachers. A corpus of texts derived from the students' exam papers, assignments, and lecture notes were analyzed, and the teachers were interviewed. The results showed that students tended to transfer some patterns of textism into their writing, particularly some morphosyntactic and paralinguistic features. Interestingly, textism was most apparent among the entry level learners to compensate for their low proficiency, and most prominent in note taking activities.

Although the earlier studies showed a transferred effect for the textism features into formal writing by non-native speakers, other studies have failed to find out a similar effect. For example, Boștină-Bratu (2015) distributed a questionnaire to a group of army cadets to examine their perception about the use of the SMS language in their writing. The results showed that despite the cadets' frequent use of textism, this frequency did not impact their academic writing. Likewise, Al-Salman and Saeed (2017) and Shah et al. (2021) failed to find transfer effects from the language of text messaging into students' formal writing. Al-Salman and Saeed (2017) examined the effect of text messaging on the academic writing of Saudi EFL learners through looking into a sample of the students' writing and a survey investigating their use of e-chatting in Arabic and English. The findings showed that the Saudi learners rarely used texting features in their academic writing. This finding was further confirmed by a questionnaire eliciting teachers' reactions to the use of textism in their students' academic writing. In the same vein, Shah et al. (2021) examined the use of texting in academic writing by Pakistani university students relying on a combination of questionnaires for learners and educators and samples of the Pakistani students' written work, Shah et al. (2021) found no statistically significant evidence that students transfer their language of text messaging into the formal university writing. According to Shah et al. (2021), Pakistani learners were context conscious and could switch to the appropriate register when writing formally because they were highly proficient in Standard English.

The current study aims to contribute to this important discussion about the use of textism in university students' formal writing. The study is motivated by the importance

of this issue which could negatively impact students' abilities to communicate their ideas, score good exam grades and meet the demands of the labor market. The study is also motivated by the current status in the literature which shows contradictory results regarding the use of textism by non-native speakers of English.

Study objectives

This paper aims at exploring the use of textism by Saudi EFL learners in their academic writing. The study is also designed to examine the learners' attitudes toward the use of textism across a variety of modalities and recipients.

Research questions

The research questions of the study are as follows:

1. What are the attitudes of Saudi EFL learners towards the use of textism in various scenarios?
2. Does the attitude of the EFL learners toward the use of textism differ across their level of language proficiency?
3. Does the students' use of textism in formal writing vary based on their level of academic achievement?

Methodology

Participants

The participants were female undergraduate students at a private Saudi university. The sample included freshmen students who studied different majors (e.g., Law and Architecture) and other students who were enrolled in an intensive program preparing them for college instruction in English. This program, which is known as the Preparatory Year Program (PYP), comprises three levels based on the level of language proficiency of the students. The three levels are equal to A2, B1 and B2 according to the Common European Framework (CEFR). During the PYP, students study 20 h of academic English per week for a period of 15 weeks for each level.

In the current study, two groups of the PYP students along with one group of freshmen responded to the items of a questionnaire. 115 students completed the questionnaire to examine their attitudes toward textism. The questionnaire respondents consisted of students who studied at B1, B2 and college majors. These students will be referred to as Level 1, Level 2 and Level 3 respectively. Additionally, essays of (240) students were examined to measure the occurrences of textism in their essays. These essays were taken from the promotional exams conducted at this private university upon students' admission in order to place the students at their right level at the Preparatory Year Program. The essays were divided into low, medium and high based on the quality rating by three referees. The judges or referees were experienced writing teachers with MA degrees in TESOL or Applied Linguistics. The frequency distribution of the study groups is provided in Table 1.

Table 1 above shows the frequency distribution of two groups of students recruited for the study. The first group of participants were (115) female EFL learners who were also

Table 1 Frequency distribution of PYP students across independent variables

Study group	Level	Frequencies	Percentages (%)
Survey	Level 1	16	13.9
	Level 2	88	76.5
	Level 3	11	9.6
	Total	115	100
Essay	Low	120	50
	Medium	85	35.4
	High	35	14.6
	Total	240	100

native speakers of Arabic. They were recruited from two programs to complete the study questionnaire. One group ($n = 11$) were freshmen students who were studying non-English majors, including Law, Engineering and Computer Science. The two other groups were recruited from the Preparatory Year Program (PYP). The two groups belonged to Level 2 ($n = 16$), which is almost at B1 CEFR level, and the Level 3 ($n = 88$), which is estimated at B2 CEFR level.

The second group consisted of (240) high school female graduates who wrote a five-paragraph essay as part of their university admission procedures. The essays were collected and analyzed for the use of textism. All students were native speakers of Arabic, but had to complete the admission test in English because the university employs English as a medium of instruction. Based on the average scores of three judges, the essays were divided into three groups: Low (score: less than 12 out of 20), Medium (score: 12–15 out of 20) and High (score: 16–20 out of 20). Fleiss' Kappa coefficient was calculated to evaluate the degree of agreement among the raters which is a statistical measure used to assess the inter-rater agreement among three or more raters who are rating categorical data (Agresti, 2013; Fleiss et al., 2013). For this study, the inter-rater reliability coefficient was found to be 0.505 which might be considered moderate to substantial agreement (Fleiss et al., 2013).

Study instruments

Two instruments were used in this study. First, students wrote a five-paragraph essay in response to one of the following prompts:

- Saudi universities have changed a lot recently. What are the three changes that we notice nowadays?
- Nowadays, speaking a foreign language is essential. What are the three advantages of speaking a foreign language?
- Online courses are better than face-to-face ones. Do you agree? Give three reasons to support your opinions.

Students were free to choose the prompt they preferred and were assigned a time limit of 90 min to complete writing the essay of their choice. They were directed to write a

5-paragraph essay in which each paragraph needs to be fully developed and consist of 5–10 sentences.

The second instrument was a questionnaire that was adopted from Grace et al. (2015). The questionnaire was translated into Arabic to ensure that all participants would comprehend its items. The questionnaire required students to rate how appropriate the use of textism was in different writing modalities, including text messages, emails, online chats and academic essays, while writing in English. The options also included a variety of message recipients to assess the students' awareness of the importance of recipient in the use of textism. The recipients varied in their ages (e.g., older versus younger) and social distance/dominance (e.g., friend versus lecturer). Responses were recorded on a five-point Likert scale (1 = not at all appropriate and 5 = entirely appropriate). It must be noted that questionnaires are vital tools to collect data on individual perspectives in a large cohort and with relative ease (Jones et al., 2013).

Data collection

The essays were completed by students on university campus in regular classrooms that were invigilated by the English teaching staff. As for the questionnaire, it was prepared in a google form and was shared with participants via emails and WhatsApp. It must be noted that data was collected only after receiving an ethical clearance from the Institutional Review Board of the Saudi university in which the study took place, and that no personal identifiers (e.g., name, university registration number) were collected in the questionnaire to protect the confidentiality of the participants' identity. The essays were simultaneously examined in two ways after having been made anonymous. First, three experienced EFL teachers who teach at the PYP rated the essays independently based on a rubric specially prepared for admission essays. The rubric assessed the students' completion of the task, development of ideas, organization of the essay as well as their accurate use of vocabulary and grammar. Second, one of the researchers examined all the essays for textism. To avoid being influenced by the meaning, the researcher examined the essays backwards; that is, from the end of the essay to the beginning. Please, note that the same students who used features of textism, such as "kinda" and "U", wrote the correct forms in other parts of the essays (i.e., "kind of" and "you"). This showed that the students were aware of the correct grammatical/ lexical forms, but slipped into using the textism features at certain points (Table 2).

Table 2 Types of textism in students' writing

Textism type	Example	Low-level	Medium-level	High-level
Contractions/shortening	Buyin for buying, esy for easy, kinda for kind of Uni for university, thru for through, makin for making	6	2	0
Homophones in alphabets	U for you	1	0	0
Omitting apostrophes	dont for do not	5	1	0
Single homophones Number	2 for two	6	10	2
No punctuation	–	25	11	2
Omitted capitals	'i for I	24	12	3
Total number of occurrences		67 (in 45 papers)	36 (in 24 papers)	7 (in 5 papers)

Table 3 below presents the mean scores and standard deviations of the observed proportion of textism across the categories of the independent variables.

Data analysis

The Univariate Analysis of Variance (ANOVA) was used to compare the attitude of the EFL learners towards the use of the language of text messaging across the different levels of proficiency. Additionally, the ANOVA analysis was conducted to examine and compare the occurrences of textism among students with different academic achievement levels. The occurrences of textism were calculated as proportion since the length of the essays varied. The independent variable was *level* with three categories (low, medium, and high), while the dependent variable was proportion of textism (proportion), respectively. As a prerequisite for the analysis, outliers, normality variance homogeneity assumptions of ANOVA were tested before the ANOVA analyses were used. Additionally, reliability and construct validity of the survey, that was adopted from Grace et al. (2015), were examined and reported.

The results showed that the Mahalanobis distance for dependent variables was smaller than the threshold which indicates that there were no outliers in the data. The normality assumption was checked with the Kolmogorov-Smirnow test and the result of the test showed that dependent variable scores were normally distributed ($p > 0.5$). The correlation coefficients reveal that there was no multicollinearity between the variables. Moreover, the results of Levene's test of equality of error variances for each dependent variable and Box's test of equality of covariance between the dependent variables were not statistically significant, which indicates the homogeneity of covariance, and that variances assumptions were met. These findings indicate that all assumptions of the ANOVA test were met for the data.

Construct validity and reliability analysis

The reliability of the questionnaire was investigated by calculating Cronbach's alpha and composite reliability coefficients. Results showed that Cronbach's alpha for the questionnaire was 0.94 and composite reliability was around 0.97 indicating high reliability. Examination of individual item statistics did not show the need to eliminate items to increase the scale's reliability. Table 4 below shows the instrument and the factor loading for each item and the Cronbach Alpha score for each item if deleted.

The construct validity of the textism questionnaire was investigated by one-factorial confirmatory factor analysis (CFA) model. For this purpose, the one-factor CFA model, in which all items in the survey load on one latent factor was tested. The fit measures were reported and used to assess model-data fit and to determine how well CFA model

Table 3 Descriptive statistics of dependent variables across categories of independent variables

Dependent variable	Achievement level	Mean Score	Std. Deviation
Proportion of Textism	Level 1	0.0029	0.0054
	Level 2	0.0009	0.0029
	Level 3	0.0000	0.0000
	Total	0.0018	0.0044

Table 4 Factor loadings of questionnaire items and reliability results

Items	Factor Loadings	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
m1	0.661	0.447	0.942
m2	0.631	0.597	0.939
m3	0.833	0.792	0.934
m4	0.810	0.766	0.935
m5	0.659	0.615	0.939
m6	0.682	0.640	0.938
m7	0.865	0.827	0.933
m8	0.847	0.802	0.934
m9	0.857	0.818	0.933
m10	0.558	0.519	0.941
m11	0.596	0.557	0.940
m12	0.796	0.749	0.935
m13	0.652	0.607	0.939
m14	0.839	0.794	0.934
m15	0.870	0.832	0.933

Table 5 Confirmatory Factor Analysis (CFA) results of one-factorial model

Group	χ^2	df	CFI	TLI	RMSEA	95% CI	
						LL	UL
One-factor Model	762.025	90	0.989	0.987	0.086	0.128	0.141

fits the data. The utilized fit measures are chi-square statistics, *CFI* (the comparative fit index), *TLI* (the Tucker-Lewis index), and *RMSEA* (root mean square error of approximation) which indicate the degree of data fit for a given model. According to the one-factorial CFA results, all items had factor loading greater than 0.30 indicating that all items showed a good fit to the model. Table 5 provides the results of one-factorial CFA model.

The fit measures in Table 5 above show that CFI and TLI statistics were above 0.95 for one-factor model. The RMSE value for the one-factor model was higher than 0.06. However, the one-factor model had CFI and TLI fit measures greater than 0.95 and RMSE values less than 0.10. Less stringent criteria were proposed by Marsh, Hau, and Wen (2004) in which $CFA \geq 0.90$, $TLI \geq 0.90$, and $RMSEA \leq 0.08$ indicate an acceptable model-data fit. As a result, an acceptable fit between the one-factor CFA model and data was achieved, as Marsh, Hau, and Wen (2004) suggested. These results indicate that the one-factor CFA model with 15 items achieved an acceptable construct validity.

Results

The results of the study are reported in light of the research questions as follows:

- (A) What are the attitudes of Saudi EFL learners towards the use of textism in various scenarios?

Figure 1 displays that ratings varied based on the recipient for each message type. The appropriateness ratings declined noticeably as the social situations became more formal, considering both the recipient, such as writing to a friend or a family member, and the modality, like taking lecture notes. On the other hand, there was an increase in appropriateness ratings when the social situations were less formal. For instance, there was a greater appropriateness rating when writing to a friend than when writing to a stranger or completing formal university assessments.

Analyses of variance (ANOVA) were conducted to investigate significant differences between message recipients and modalities. According to the multiple comparison results, there were no statistically significant differences between friends and family recipients for all types of modalities (emails, texting and online chats). However, the mean score of textism appropriateness for friends was somewhat larger than that for family recipients. Moreover, the use of textism was found to be more appropriate while communicating with friends compared to siblings, with siblings compared to older family members, and with older family members compared to strangers (all p -values < 0.005).

When it comes to attitudes towards textism in the context of university work, the use of textism was found to be more appropriate while taking lecture notes than using it in written exams and assignments. However, there was no significant difference in mean appropriateness between written exams and assignments. The online chat received the highest ratings of appropriateness, followed by texting, emails and university work, respectively. However, the mean score for recipients differed across the modalities. For instance, although online chat had the highest ratings of appropriateness, friend recipient in texting modality received the highest ratings of appropriateness. Overall, students

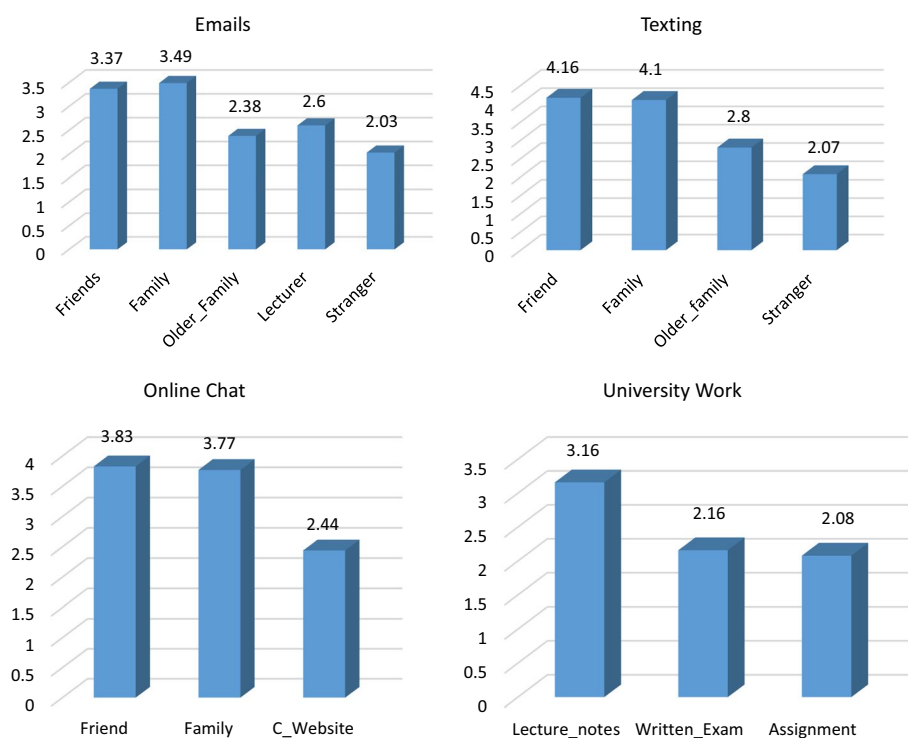


Fig. 1 Appropriateness of textism usage across modality and recipient types

were able to distinguish between different types of recipients when rating the appropriateness of textism usage.

- (B) Does the attitude of the EFL learners towards the use of textism differ across their proficiency level?

Table 6 below contains the ANOVA results of pairwise comparisons (multivariate effects) that provide significant levels of pairwise comparison of the level variable on attitudes towards textism variable across the different modalities. The significant mean differences between categories of the level variable were given to examine where these differences occurred and in favor of which categories.

The ANOVA analysis results in Table 6 above revealed significant differences between the three categories of the proficiency levels in terms of ratings for appropriateness of textism for the four dependent variables (texting, emails, online chat, and university work modalities) at the 0.05 significance level. For both texting and email modalities, there were statistically significant mean differences between all three categories of the independent variable, with negative mean differences observed for the Level 3 vs. Level 1 and Level 3 vs Level 2 comparisons, and a positive mean difference for the Level 1 vs Level 2 comparison. For online chat, there were statistically significant mean differences between Level 3 and Level 1, as well as between Level 1 and Level 2, with negative mean differences observed for the Level 3 vs Level 1 comparison, and a positive mean difference for the Level 1 vs Level 2 comparison. The mean difference between Level 3 and Level 2 was not statistically significant.

For university work, there were statistically significant mean differences between Level 3 and Level 1, as well as between Level 3 and Level 2, with negative mean differences observed for both comparisons. However, the mean difference between Level 3 and Level 2 was not statistically significant. Overall, these results indicate that the use of different levels of English proficiency was associated with significant differences in

Table 6 The significant difference between categories of independent variables on attitudes towards textism

Dependent Variable	Ind. Variable	Categories (I vs J)	Mean Difference (I-J)	Std. Error	Significance Level (p)
Texting	Level	Level 3 vs Level 1	-1.276*	0.282	0.000
		Level 3 vs Level 2	-0.702*	0.230	0.002
		Level 1 vs Level 2	0.574*	0.196	0.004
Emails	Level	Level 3 vs Level 1	-1.455*	0.246	0.000
		Level 3 vs Level 2	-1.018*	0.196	0.000
		Level 1 vs Level 2	0.437*	0.179	0.015
Online Chat	Level	Level 3 vs Level 1	-0.973*	0.331	0.004
		Level 3 vs Level 2	-0.515	0.270	0.058
		Level 1 vs Level 2	0.458*	0.230	0.047
University Work	Level	Level 3 vs Level 1	-1.002*	0.343	0.004
		Level 3 vs Level 2	-0.780*	0.280	0.006
		Level 1 vs Level 2	0.222	0.238	0.353

intrusion of textism in texting, emails, online chat, and university work. These findings may have important implications for language education, suggesting that the proficiency level can impact attitudes towards use of textism in various settings.

(C) Does the students' use of textism in formal writing vary based on their level of achievement?

The ANOVA analysis was conducted to examine and compare the occurrences of textism among students with different academic achievement levels. The ANOVA results showed that there was a statistically significant difference between the categories of *level* variable ($F(2, 237) = 9.181$, $p = 0.00 < 0.05$, $\eta^2 = 0.072$) where the dependent variable is the proportion of observed textism in essays. Thus, the main effects of the *level* variable on proportion variables were statistically significant. These results indicate that the proportion of the observed textism differs across the achievement levels of EFL learners. Table 7 below contains the ANOVA results of pairwise comparisons (multivariate effects) that provide significant level variable on observed textism.

When it comes to ANOVA results related to observed textism in Table 7, there was a significant mean difference between students with low and medium achievement levels in proportion of observed textism. Moreover, the discrepancy between students with low and high levels in the proportion of textism was significant while the difference between medium and high levels was not significant. Both significant mean differences in the proportion of textism were in favor of the low-level group which indicates that students with low achievement levels tended to use textism more often while writing the essays. Additionally, the non-significant mean difference between medium and high-level groups implies that as the students' achievement level increases, they are less likely to utilize textism. Figure 2 depicts proportion of textism as a function of achievement levels.

Figure 2 depicts the proportion of textism used by students across different achievement levels. The figure shows that students with lower achievement levels tended to use more textism compared to those with higher achievement levels. This suggests that there is a negative correlation between achievement levels and the use of textism. Furthermore, the figure shows that as the students' achievement levels increased, their tendency to use textism in their essay writing process tended to decrease. This could be interpreted as indicating that as students became more proficient in their writing, they tended to use more formal and academic language, and avoid informal language such as textism. Overall, these results suggest that achievement levels and the use of textism

Table 7 The significant difference between categories of independent variables on observed textism

Dependent variable	Ind. variable	Categories (I vs. J)	Mean difference (I-J)	Std. error	Significance level (p)
Proportion	Level	Low vs. Medium	0.002	0.0006	0.001
		Low vs. High	0.003	0.0008	0.000
		Medium vs. High	0.0009	0.00085	0.267

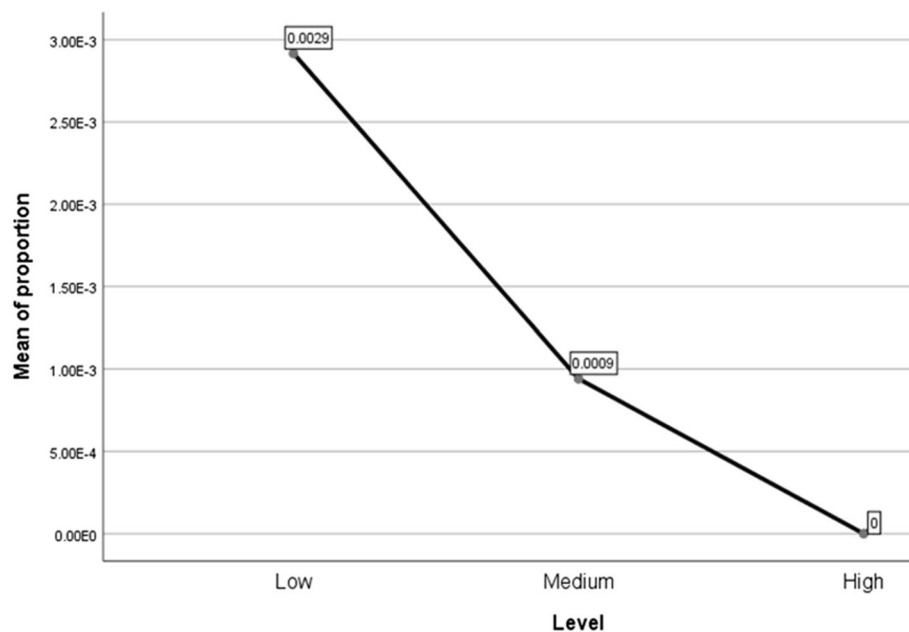


Fig. 2 The distribution of textism usage proportion as a function of achievement levels

in writing are closely related, and that improving writing skills and higher achievement levels could lead to reduced use of textism.

Discussion

The current study aimed to examine university students' attitudes toward using textism. To this end, (115) students from three different levels of proficiency completed a questionnaire that explored their attitudes toward using textism across several modalities (e.g., online chat and emails) and recipients (e.g., friends and strangers). Additionally, (240) students' essays were examined to identify the occurrences of textism. The essays were divided into three levels (i.e., low, medium and high) based on the students' scores of the quality of their writing.

What are the attitudes of the EFL learners towards using textism in various scenarios?

The results generally showed that students exhibited a good level of sensitivity towards the appropriate use of textism in various modalities and when communicating with several recipients. For example, they were aware of the appropriate use of textism in online chatting and texting while they disapproved of the use of textism in university assignments and exams. Similarly, the students distinguished between different recipients while using textism. It was rated as more appropriate to use textism with close recipients (e.g., friends or family members) versus distant recipients (e.g., strangers). These results reveal that students were aware that transfer of the use of textism from online chatting/texting to academic writing was wrong (Saloman & Perkins, 1989). This was reflected in their responses to the study questionnaire items. The results are also in line with previous studies on non-native English speakers that indicated that they exhibit context

consciousness towards the use of textism in their writing (e.g., Al-Salman and Said, 2017; Shah et al., 2021).

Does the attitude of the EFL learners towards the use of textism differ due to their language proficiency level?

The results of this research question revealed that the students' language proficiency level impacts their attitudes towards using textism in various settings. For example, low-proficient students gave higher ratings of the use of textism in their texting, emails, online chatting and university assignments and other tasks than the other students who were at a medium or higher levels of proficiency. However, it must be noted that there were no significant differences between the students of medium and high levels of proficiency in their ratings of the use of textism in online chatting and of university work. This result is supported by the finding of AlKadi (2019) who found greater use of textism by low-proficient Yemeni students in comparison with high-proficient ones. The results also match the findings of Shah et al. (2021) in which high-proficient Pakistani students showed great consciousness of the importance of context on the use of textism in writing. In fact, the difference of language proficiency level explains the contradictory results in the literature as the proficiency level can be the modulating factor of these divergent results. It seems that the higher proficiency level, the more aware the students are of the appropriate use of textism in writing. The results also show that language proficiency is a modulating factor of transfer when it comes to the use of textism (Saloman & Perkins, 1989).

Does the students' use of textism in formal writing vary based on their academic achievement level?

The results of the analysis of textism in the students' essays revealed that students with low scores used a significantly higher number of textism in their writing than those who achieved medium or high scores. However, no statistically significant difference was noted between medium and high-achievers. This result lends further support to the finding that proficiency greatly impacts students' perceptions and use of textism. The more proficient the students were at writing, the less textism they produced. Interestingly, it was only at a low level of proficiency that students produced a high number of textisms, which indicates that this feature can be avoided early in the foreign language learning process. It must also be noted that this result comes in line with the previous studies (AlKadi, 2019; Odey et al., 2014; Saberi, 2016) which showed that students who are not native speakers of English can wrongly transfer the use of textism in their writing. The novel finding is that this transfer was limited to low-proficient students who did not master academic writing well.

In light of the above results, the current study suggests some theoretical and pedagogical implications. In terms of theory, the findings support the concept of transfer in the low-road/high-road model of teaching transfer (Saloman & Perkins, 1989). Low-proficient students transferred the skill of using textism from text messaging and online chats to their academic writing without showing sufficient sensitivity to the differences in contexts of use. However, the present study shows that several factors can modulate the effect of transfer. In the case of foreign language learning, the students' language

proficiency greatly impacts their performance. In terms of pedagogy, the current study shows that low-proficient students' awareness needs to be raised concerning the use of textism in writing. These students use a high number of textisms in writing even though they may be aware of the inappropriateness of their actions at the declarative knowledge level. In this regard, providing regular and focused feedback on students' writing will be helpful.

Conclusion

Amidst several media reports showing concern over the possible use of textism in academic writing, academics (e.g., Boştină-Bratu, 2015; Sockett, 2014) have become increasingly alarmed about the future of academic writing among the younger generation who use textism with great frequency. Several studies (e.g., Al-Kadi, 2019; Grace et al., 2015; Odey et al., 2014; Shah et al., 2021) have been conducted to address this concern. The results among native speaking undergraduates were largely assuring since students were sensitive to the appropriate use of textism and did not find it suitable for use in academic writing (Grace et al., 2015; Rosen et al., 2010). However, the picture changed when non-native speaking university students were concerned. A set of contradictory results emerged (e.g., Al-Kadi, 2019; AlSalman & Saeed 2017; Odey et al., 2014; Shah et al., 2021), which left the question of whether undergraduates would use textism in academic writing unresolved.

The current study aimed to contribute to this line of research through examining the use of textism by Arab EFL undergraduates and their attitudes towards its use in different modalities and to different recipients. A sample of 115 students completed a questionnaire regarding their attitudes towards the use of textism. Additionally, 240 academic essays were analyzed to examine the actual use of textism by the participants. The results revealed that students showed awareness of the different types of recipients and modalities when rating the appropriateness of textism in the questionnaire. When it came to actual use, the students with low scores on the quality of their essays produced a relatively high number of textism, which was significantly more frequent than those with medium and high scores. The results indicated that language proficiency greatly impacts the transfer of textism into academic writing.

The current study calls for further research in the area of textism. First, our study was based on data that were collected only from female participants. It would be interesting to see the results of a more gender-balanced sample in the future. Second, adopting a mixed method approach can be useful. Conducting interviews with students can help us better understand their attitudes and use of textism. Third, other variables can be examined in relation to textism, including gender, level of education and mode of communication.

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Author contributions

FA: conceptualization—design—data coding—data analysis—reviewing the paper. BO: design—data analysis—writing the paper—reviewing the paper. DASED: design—writing the paper—reviewing the paper.

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Availability of data and materials

Data and materials will be available upon request.

Declarations**Ethics approval and consent to participate**

This study complies with all standard research ethics standard. Approval to conduct the study was sought from the Institutional Review Board of Prince Sultan University. Written consents from participants were collected prior to conducting the study.

Consent for publication

This article does not contain any materials that require special consent for publication.

Competing interests

The authors declare that they have no competing interests with respect to the concerned article.

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