I Want to Marry *the Merchant Banker: An Exploratory Self-Paced Reading Experiment on Arab Learners’ Processing of English Articles

Я хочу вийти заміж за *торгового банкіра: Експеримент із дослідження особливостей обробки статей англійською мовою арабськими студентами під час самостійного читання

Mona Sabir
Ph.D. in Applied Linguistics, Associate Professor

Mona Сабір
доктор філософії в галузі прикладної лінгвістики, асистент професора

E-mail: msabir@kau.edu.sa
https://orcid.org/0000-0003-1995-3699
Scopus ID: 57208163701

Alaa Melebari
Ph.D. in Linguistics, Assistant Professor

Алаа Мелебарі
доктор філософії в галузі лінгвістики, асистент професора

E-mail: amelebari@kau.edu.sa
https://orcid.org/0000-0002-4029-7828

King Abdulaziz University
(Saudi Arabia)
Alsulaymania, Jeddah, Saudi Arabia, 21589

Університет короля Абдул-Азіза
(Саудівська Аравія)
Алсулайманія, Джідде, Саудівська Аравія, 21589

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ABSTRACT

Purpose. This study explores the processing of English articles by native speakers of Hejazi Arabic, a language with articles. The research aims to answer the question of whether offline (explicit) knowledge of specificity in English article choice mirrors online (implicit) knowledge. Existing research has found that Hejazi-Arabic learners of English misuse articles in the indefinite specific context when answering a written task; however, their performance is target-like in all other contexts of article use, which indicates that their production may be sensitive to specificity, similar to the production of learners from languages that do not include articles. Little has been done, though, to explore this phenomenon using online measures.

Methods. To answer the research question, 68 speakers of Hejazi-Arabic were recruited alongside 23 native English speakers. The participants and native English speakers completed an article elicitation task and self-paced reading task.

Results. The results of the article elicitation task show learners’ overuse of the in the indefinite specific context, which is consistent with the findings of existing research. Similarly, the real-time processing results indicate that there is a wider gap in reaction times between natives and L2 learners in the indefinite specific context, suggesting that learners’ online performance is not on target in this context.

Conclusion. The study concludes that Hejazi Arabic speakers’ online knowledge of English articles show some resemblance to their offline knowledge. Theoretical implications and methodological issues are also discussed.

Key words: processing of English articles, self-paced reading, definiteness, specificity, implicit knowledge, explicit knowledge.

Introduction

English article acquisition has received significant attention over the last 20 years (Garcia Mayo & Hawkins, 2009). The consensus on L2 learners’ production is that article substitution errors (i.e. using the instead of a/an, and vice versa) are more persistent than article omission errors, especially among learners from article-less (–ART) languages. Ionin et al. (2004) offered a theoretical explanation for substitution errors in non-generic contexts by attributing the substitution errors common among learners from –ART language backgrounds to the specificity feature, but they left the question regarding learners from a language background with articles (+ART) unanswered.

A limited number of studies have used psycholinguistic or online approaches to explore L2 learners’ article use (Ionin et al., 2021). It is essential to use these methods because they draw upon implicit knowledge more than offline tasks, which draw upon explicit
knowledge (Ellis, 2005; Jegerski, 2014; Jiang, 2007). It has been found that adult L2 learners generally perform better at offline tasks that target explicit knowledge than at online tasks that target implicit knowledge (Ellis, 2005). Though online measures may be reliable indicators of learners’ implicit knowledge, they do have pitfalls (Ionin et al., 2021). For example, learners’ omission errors in tasks that explore implicit knowledge may be due to the pressure of these timed tasks rather than a lack of knowledge. Psycholinguistic methods, such as self-paced reading tasks (SPRTs), help to circumvent this limitation. Drawing upon implicit knowledge, these methods assess comprehension without placing learners under production pressure, as Jiang (2007) discussed. Hence, this study compared performance in an SPRT versus an offline task to investigate whether the implicit knowledge of English articles among L2 English learners from an L1 with articles (Hejazi Arabic) mirrors their explicit knowledge.

Previous research focused on the production of English articles by Arabic-speaking learners (+ART language background) (Abumelha, 2016; Almahboob, 2009; Sabir, 2015; Sabir, 2018) found that Arabic learners often overuse the in contexts where definiteness and specificity are not aligned. These speakers’ production was found to be sensitive to the specificity feature in the indefinite specific context, similar to learners of –ART L1s. This behaviour was observed offline in written tasks. English language learners were generally found to use articles more accurately when completing imitation tasks (where half of the target sentences were missing articles) than in forced choice elicitation tasks, which suggests that tasks that rely on explicit knowledge direct learners’ attention towards explicit grammatical rules (Ionin, personal communication). Therefore, if learners from +ART language backgrounds fluctuate between the and a/an (i.e. are sensitive to specificity) in tasks that are assumed to explore explicit knowledge, a plausible explanation may be that these learners do not rely on implicit (intuitive) knowledge (i.e. their behaviour cannot be explained in terms of parameter setting) but instead rely on explicit (and linguistically invalid) beliefs.

Arabic-speaking learners’ online processing of English articles has not yet been explored. In light of the findings of Ionin et al. (2004) and Ionin et al. (2021), the present study compared the role of specificity in the English article choice of Hejazi* Arabic speakers both offline

* Hejaz refers to the western region of Saudi Arabia (western border on the Red Sea).
(using an article elicitation task [AET]) and online (using an SPRT). Therefore, the paper aims to explore whether implicit knowledge of articles among Arabic-speaking L2 learners of English mirrors their explicit knowledge.

The paper begins with a background of Ionin et al.’s (2004) work, followed by a contrastive analysis of definiteness and specificity marking in Arabic compared to English, and a brief overview of the existing research on English article acquisition and processing. The details of the current study are provided next. Finally, the results of the study are presented and discussed.

**Theoretical Background**

Ionin et al.’s (2004) proposal is centered on two semantic features that are considered to be discourse-related properties of articles, namely definiteness and specificity. Ionin et al. (2004) found that article misuse was related to these two features in learners’ L1 backgrounds. The present study adopted Ionin et al.’s (2004) definitions of definiteness (shared knowledge between the speaker and hearer) and specificity (speaker’s knowledge), based on Heim (1991) and Fodor and Sag (1982), respectively. The definitions are as follows:

*If a determiner phrase (DP) in the form [D NP] is...*

- a. [+definite], then the speaker and hearer presuppose the existence of a unique individual in the set denoted by the NP.
- b. [+specific], then the speaker intends to refer to a unique individual in the set denoted by the NP and considers this individual to possess some noteworthy property.

(Ionin et al., 2004: 5).

The key notions of Ionin et al.’s (2004) proposal are the article choice parameter (ACP) and the fluctuation hypothesis (FH). The ACP dictates article choice in two-article languages cross-linguistically; the parameter has two settings: Languages either encode articles based on definiteness (e.g. standard English and Arabic) or based on specificity (e.g. Samoan).

By analysing data collected from Russian and Korean English learners (from −ART languages), Ionin et al. (2004) found that these
learners may have access to UG parameters and that their article choice may consequently fluctuate between the two parameter settings. This fluctuation is the core concept of the FH, under which L2 learners’ fluctuation results in substitution errors that may be detected in contexts where there is a mismatch between definiteness and specificity. Therefore, learners may use the instead of a/an in [−definite; +specific] contexts and a/an instead of the in [+definite; −specific] contexts according to the specificity setting. On the other hand, learners may not substitute articles when there is no clash between definiteness and specificity ([+definite; +specific] and [−definite; −specific]). Ionin et al. (2009) revised the original FH after evaluating Samoan articles and limited fluctuation to the overuse of the in [−definite; +specific] contexts. The predictions for article choice are presented in Table 1.

Table 1
Predictions for Article Choice in L2 English (revised version of Ionin et al.’s (2004: 19))

<table>
<thead>
<tr>
<th>[+definite]: target the</th>
<th>[−definite]: target a</th>
</tr>
</thead>
<tbody>
<tr>
<td>+specific</td>
<td>correct use of the</td>
</tr>
<tr>
<td>−specific</td>
<td>correct use of the</td>
</tr>
</tbody>
</table>

According to the FH, native speakers of −ART languages never set the ACP when acquiring their L1, which causes them to fluctuate between the specificity and the definiteness setting when acquiring an L2 with articles. Despite the fact that this parameter setting is an unconscious, implicit process, most research on the FH has used methods that draw upon explicit knowledge (e.g. forced-choice elicitation tasks), warranting an investigation of the implicit processing of articles in L2 learners.

How Arabic and English Mark Definiteness and Specificity

Arabic and English are similar in terms of definiteness-based article encoding. However, Arabic differs from English in terms of marking indefinites in that the former allows indefinite bare NPs. According to Bardeas (2009), spoken varieties of Hejazi Arabic do not have an overt marker for indefiniteness (Example 1).

To mark definiteness, Arabic has the morphological marker al- in both its standard and non-standard varieties, whereas English has the
marker *the*. These markers are used in both languages’ written and spoken varieties. Furthermore, *the* and *al-* are not marked for number or gender, as is the case in several other +ART languages (e.g. Spanish).

(1). *Bait*

house.M.SG
‘a house’

(Bardeas, 2009: 31).

Definiteness in Arabic is not realised solely using *-al* (see Example 2), which is attached to nouns as a prefix. It is also indicated in other forms such as a noun construct relationship called *idaafa*, in which the first noun is considered definite because it is related to a second noun that is definite (Example 3 in italics). Another way to realise definiteness is by using a possessive suffix (Example 4; Sarko, 2011). It should be noted that Examples 1–5 are from modern standard Arabic (MSA), while Examples 6–10 are from the Hejazi Arabic dialect.

(2). *ʔusaafru* ʔilaal ʔdimafq-i ʔbi-al-sajjaarat-i ʔdaʔaʔim-an
travel.I.PRES To Damascus-GEN by-the-car.F-GEN always-ACC
‘I always travel to Damascus by car.’

(3). *ʔstaʕru* kitaab-a al-walad-i
borrow.I.PAST book-ACC the-boy-GEN
‘I borrowed the boy’s book.’

(4). *ʔstaʕru* kitaab-uh
borrow.I.PAST Book-his
‘I borrowed his book.’

(Sarko, 2011: 25–26).

This study focuses on simple definites (Example 1), which are expressed through the presence or absence of *al-*, as supported by Lyons (1999: 2), as follows:

Noun phrases with *the* and *a* and their semantic equivalent (or near-equivalents) in other languages can be thought of as the basic instantiations of definite and indefinite noun phrases, in that the definiteness or indefiniteness stems
from the presence of the article, which has as its essential semantic function to express this category.

To mark indefiniteness in written and spoken varieties, English uses *a/an* with singular NPs and *null* with plural NPs. Conversely, it has been argued that the suffix -n (nunation) is the indefinite marker in MSA (Ryding, 2005). The reason underlying this argument is that nunation appears in a complementary distribution with the definite prefix *al-* (Example 5). However, scholars such as Lyons (1999) and Almahboob (2009) have rejected this argument (Example 6); the latter has argued that in MSA, “nunation is permissible with a proper noun, which is considered definite, indicating that if nunation were a true marker of indefiniteness, it is feasible to think that it should not occur with a definite noun” (Almahboob, 2009: 53).*

(5). baab-u-n
door.M.SG-NOM-INDIF
‘a door’

(Bardeas, 2009: 29).

(6). hind-u-n
Hind.M-NOM-Nunation
‘Hind’ (a proper noun female name)

(Almahboob, 2009: 52).

On the contrary, the specificity distinction in Arabic (which is similar to that in English), is not morphologically realised; rather, it is expressed in discourse (Sarko, 2011). Sarko (2011) founded this argument on the results of an investigation of Syrian Arabic. The realisation of specificity through context is illustrated in the following examples from Hejazi Arabic, which show four contexts of the combination of the features ±definite ±specific (Examples 7–10). In Examples 7 and 9, there is no marker of specificity, though it is clear from the context that the speaker has a specific referent in mind. On the other hand, Examples 8 and 10 show that the speaker is not thinking about a specific referent.

* Brustad (2000), Holes (1995), and Ryding (2005) have provided more linguistic details about the Arabic DP.
In summary, the distinction between definite and indefinite structures is marked morphosyntactically in both English and Arabic. In contrast, neither language expresses the distinction between specific and non-specific morphosyntactically; rather, the interpretation depends on contextual factors. In other words, whether an NP is interpreted as having a specific or a non-specific reference depends on the context.

**The Acquisition of English Articles**

The practice of viewing article acquisition according to ACP, FH, and UG accessibility started with Ionin et al.’s (2004) study in which the authors tested the article choice of 30 L1 speakers of Russian and
40 L1 speakers of Korean during a forced choice elicitation task. Their study produced clear evidence of fluctuation between definiteness and specificity. To gain further insights into the topic, Ionin et al. (2009) compared English article choice among adult and child speakers of Russian. Whereas Ionin et al. (2004) generalised sensitivity to specificity to both definite and indefinite contexts, Ionin et al. (2009) found that the specificity effect was limited to indefinites, as stated in Table 1. Moreover, Ionin et al. (2009) associated learners’ sensitivity to specificity with their language proficiency levels. In other words, the authors found sensitivity to specificity exclusively regarding indefinites in the production of learners with higher proficiency levels. Conversely, lower proficiency learners tended to show sensitivity to specificity with both definites and indefinites.

Ionin et al. (2004) did not test the production of learners from +ART language backgrounds, which has motivated other researchers to investigate whether such learners’ article choice will fluctuate. García Mayo (2009) targeted low-intermediate and advanced L1 Spanish learners of English using the same elicitation task, found no evidence of fluctuation, and concluded that transfer overrides fluctuation. Additionally, Hawkins et al. (2006) conducted a comparative study involving learners from +ART language backgrounds whose L1 encodes definiteness (Greek) and learners from –ART language backgrounds (Japanese). Using the same elicitation task as Ionin et al. (2004), the authors found that the Greek speakers did not fluctuate in [−definite, +specific] contexts, a finding consistent with those of García Mayo (2009). Furthermore, Snape (2006) compared article choice in L1 Spanish and L1 Japanese learners of L2 English and found that L1 Japanese learners made substitution errors, which, according to Snape, was not the result of inappropriate parameter resetting, but rather due to the remapping features of the UG/L1 to L2 forms. In contrast, Snape found that Spanish learners did not substitute articles, a finding in line with the full transfer/full access hypothesis (FTFA; Schwartz & Sprouse, 1996).

Regarding Arabic-speaking learners of English, Sarko (2009) tested French and Syrian Arabic speakers, both of whom have +ART L1 backgrounds where articles are assigned based on definiteness; however, these two languages differ from English and from one another in their morpho-phonological distribution of articles. The author hypothesised
that if the representation of indefinites contains D, spoken Arabic has a phonologically null exponent, and fluctuation is (not) expected. However, if D is absent in the representation of indefinites, spoken Arabic indefinites would have a status similar to that of NPs in −ART languages, causing Arabic learners’ article choice to fluctuate. The results show that the Syrian Arabic group differed significantly from the NS control group in [−definite, +specific] contexts. Sarko argued that this result does not support the FH and that Syrian Arabic learners used the mainly in contexts where relative clauses were present, which is consistent with the FTFA but inconsistent with the FH. Thus, Sarko’s study created an opportunity to test Arab learners’ article choice in [−definite, +specific] contexts where relative clauses are not present (i.e. in which the L1 transfer effect is not expected), which will reveal whether Arabic-speaking learners are sensitive to the effect of specificity, in line with the focus of the present study.

In addition to Sarko (2009), Almahboob (2009) tested Arabic-speaking learners of English using a forced-choice elicitation task and a written production task and found that these learners fluctuated between the two parameter settings of the ACP in the [−definite, +specific] context. Additionally, Sabir (2018) conducted a study involving 58 Hejazi Arabic speakers to determine whether specificity influenced English article choice (excluding relative clause modification structures) using Ionin et al.’s (2009) AET. Hejazi Arabic-speaking learners fluctuated between definiteness and specificity in the same way as learners from −ART language backgrounds, a finding that contradicts existing research on L2 learners from +ART L1 backgrounds (García Mayo, 2009; Hawkins et al., 2006; Sarko, 2009; Snape, 2006). Sabir (2018) linked these findings to Arabic articles’ linguistic characteristics such as the lack of an indefinite marker or the possible existence of a specificity marker in the spoken variety. However, further research is required to investigate the presence of such a marker.

**Previous Online Studies on Articles in the L2**

Most of the research conducted on L2 learners’ article usage has focused on their offline production and neglected mapping it to L2 learners' implicid knowledge. Furthermore, the few studies that have examined L2 learners’ implicit knowledge have largely relied on data from learners from −ART language backgrounds. Kim and Lakshmanan
(2009) are among the few that have utilised psycholinguistic approaches; they investigated the ability of Korean-speaking L2 learners of English to distinguish English articles based on specificity rather than definiteness. Using an SPRT, the authors presented participants with pairs of sentences that included either the definite article *the* or the indefinite article *a*, in which the first sentence contained the selected article and the second denoted context (specific vs. non-specific). Since the authors focused on specificity, they only created two conditions: a [−definite, −specific] condition and a [−definite, +specific] condition appearing in a grammatical and an ungrammatical version. The participants were placed in either the intermediate or the advanced group based on their English proficiency level. The results suggest that the control group and the advanced L2 learners fluctuated between the definiteness setting and the specificity setting, whereas intermediate L2 learners initially processed articles based on specificity and then definiteness, which is in line with Ionin et al.’s (2004) proposal. Kim and Lakshmanan’s (2009) results were inconclusive; learners’ and native speakers’ reading times (RTs) were not distinct from each other, and the total RT for the second sentence may have been inaccurate.

Ahn (2019) further explored the processing of English articles by L1 Korean speakers of L2 English. Using an SPRT, the author investigated the ways in which L1 and L2 speakers differ in terms of processing definite vs. indefinite NPs that presuppose unique vs. non-unique referents. Participants were presented with sentences including a definite or an indefinite noun in either a unique or non-unique context; the sentences were divided into eight to nine regions (with three regions of interest) to compare L1 vs. L2 participants’ behaviour and track significant effects. The findings show that the L2 participants (intermediate and advanced) initially resorted to their L1 grammar; they demonstrated sensitivity to definiteness in their longer reaction times in the ‘critical region’, whereas the advanced group manifested another latter target-like effect in their longer ‘post-spill-over region’ reaction times. According to the author, the L2 intermediate and advanced groups’ long reaction times in the critical region may be interpreted as “real-time evidence for [the] FH” (Ahn, 2019: 20).

Trenkic et al. (2013) investigated Mandarin-speaking (−ART) L2 English learners’ online use of articles using the eye-tracking method. The study focused on whether L2 learners, like native speakers,
choose between the and a to resolve reference. To illustrate, the learners and the native control group heard sentences such as The pirate will put the cube inside the/a can, while looking at open and closed cans, where only the open can was an accurate reference relating to the cube. Trenkic et al. (2013) found that learners behaved like native speakers. That is, when participants heard the can, they chose one open can; on the other hand, if they heard a can, they chose two open cans. Trenkic et al. (2013) attributed this result to the association between the and uniqueness. This result indicates that the L1 Mandarin learners of L2 English successfully associated the articles the and a with the concept of (non)uniqueness.

Furthermore, in Agebjörn (2020), L2 acquisition of English articles among 26 participants from −ART language (Russian and Belarusian) backgrounds were investigated. Learners’ explicit knowledge (i.e. their ability to explicate the principles governing the distinction between definite and indefinite structures) was tested using a multiple choice task, while their implicit knowledge was tested using an oral communicative task. Having compared the results of both tasks, Agebjörn found no correlation between explicit and implicit knowledge, suggesting that explicit knowledge is not crucial for these learners’ acquisition of article meaning.

Ionin et al. (2021) used both offline and online methods to explore whether L2 learners of English from a Mandarin (−ART) language background could acquire the indefinite article despite the lack of articles in their L1. The authors examined learners’ sensitivity to the two types of article errors, namely omission and misuse. Thirty-two native English speakers and 32 Mandarin-speakers of L2 English participated in an SPRT and a grammaticality judgement task. The results show that learners were sensitive to article errors online and that their performance was more on target online than offline.

In summary, most of the studies that have explored the online acquisition of English articles examined data from learners with −ART language backgrounds. To the best of our knowledge, no study has utilised psycholinguistic approaches to investigate knowledge of the L2 article system among learners from +ART language backgrounds. Studies such as Trenkic et al. (2013) have shown that L2 learners can acquire articles implicitly. Our study used an SPRT method similar to that employed by Kim and Lakshmanan (2009), Ahn (2019), and...
Ionin et al. (2021) to explore whether Hejazi Arabic (+ART) speakers’ implicit knowledge of specificity in the English article system mirrors their explicit knowledge. It is hypothesised that explicit knowledge of definiteness will reflect implicit knowledge, as it is grammaticised in the learners’ L1, whereas explicit knowledge of specificity will not reflect implicit knowledge, as it is not grammaticised in their L1.

**The Current Study**

This study aims to explore whether native speakers of Hejazi Arabic are affected by specificity when choosing English articles offline and/or online. Based on the findings of Almahboob (2009) and Sabir (2018), this research made certain predictions. First, in an AET, learners’ article choice is expected to fluctuate in the indefinite specific context since they are being tested offline. That is, these learners are expected to overuse *the* (instead of *a*) in the indefinite specific context. Second, in an SPRT and based on studies on the event-related potentials (ERPs) of semantic anomalies (Holcomb, 1988; Holcomb & Neville, 1990; Kutas & Hillyard, 1980, 1984, 1989; Rugg, 1985, 1987), a semantic mismatch between the article and its context is expected to slow processing, yielding longer latencies. Therefore, the use of *a* or *the* in an incongruent context would require longer processing time. However, given that the mismatch cases provided in this study are based on whether the article is used in felicitous vs. infelicitous (rather than grammatical vs. ungrammatical) contexts, a significant slowdown is not expected to occur in the mismatch cases. In contrast, significant differences between native speakers (NSs) and L2 learners (L2ers) are predicted; specifically, NSs are expected to outpace L2ers at processing both match and mismatch cases, since they process L1 information, unlike their L2er counterparts (Martin et al., 2013; Pérez & Bajo, 2018).

The current study’s central prediction is that if participants show sensitivity towards the target context (the indefinite specific) in terms of fluctuation (monitored by the AET) and longer latencies (monitored by the SPRT) compared to NSs, it may be concluded that they have not acquired the English article system either explicitly or implicitly. Contrastively, if the participants show no sensitivity to specificity in the AET and the SPRT, i.e. they have target-like latencies, the assumption is that the system has been acquired implicitly and explicitly. That is, fluctuation in the AET corresponds to failure to acquire explicit
knowledge, whereas longer latencies and non-target-like behaviour in the SPRT correspond to failure to acquire implicit knowledge.

**Method**

**Participants**

The participants comprised 68 L1 Hejazi Arabic-speaking learners of English (L2ers; mean age = 20.2) and 23 native speakers of English (NSs; mean age = 20). The NSs were graduate and undergraduate students recruited from an American university. The Hejazi Arabic speakers were also university students taking a compulsory English as a foreign language (EFL) course. These participants were recruited through their academic institution. The L2ers completed a language background questionnaire in addition to the experimental tasks and reported that Hejazi Arabic was their only L1 and that they were learning English as their L2. Most learners started learning English at the intermediate school stage as per the national school curriculum. Additionally, the questionnaire revealed that these participants had never spent any period longer than a month in an English-speaking country and that they mainly used English in language classrooms or on social media sites. Based on their Oxford Quick Proficiency Test (OQPT) scores, the participants were classified as lower intermediate-level learners of English (i.e. participants scored between 24 and 30 out of 40 on Part 1 of the OQPT and between 30 and 39 out of 60 on Part 2). Their level per the Council of Europe was B1.

**Instruments and Procedure**

To test the abovementioned predictions, the study adopted Ionin et al.’s (2009) AET and an SPRT specifically designed for this experiment (given that the SPRT is considered a measure of implicit knowledge; Jegerski, 2014; Jiang, 2007). The AET and the SPRT were both administered in one session. The SPRT was hosted on Ibex Farm (http://spellout.net/ibexfarm/; Drummond, 2011), an online platform for psycholinguistic experiments. The EFL participants took, on average, 1 hour to complete the AET and the OQPT, while the English NSs took, on average, 15 minutes to finish the AET. Both groups completed the SPRT in approximately 25–35 minutes. The tests were administered
to the participants in the following order: the OQPT, followed by the SPRT, and then the AET. All participants (NSs and L2ers) were asked to complete a demographic information form and provide consent at the beginning of the experiment. Participants were compensated for their time and effort.

**AET**

The AET comprised 48 short dialogues targeting the use of articles with singular count nouns. The dialogues included 24 target items (six for each target context) covering non-generic contexts involving definiteness and specificity (see Examples 13–16) and 24 fillers. The test was prefaced by an instruction page explaining how to answer the questions; this was followed by a practice question. For the full AET dataset, see Sabir and Melebari (2023a).

(11). [+definite, +specific]

At a bookstore

Chris: Well, I’ve bought everything that I wanted. Are you ready to go?

Mike: Almost. Can you please wait a few minutes? I want to talk to ______ owner of this bookstore – she is a very nice lady, and I always say hi to her.

(12). [+definite, −specific]

After a girls’ soccer game at school

Child: Excuse me! Can you please let me in?

Coach: What do you need?

Child: I am a reporter for my school newspaper! I need to talk to ______ winner of this game – I don’t know who she is, so can you please help me?

(13). [−definite, +specific]

Father comes home

Father: Thank you for taking care of Karen. How did you spend the day?

Babysitter: Well, we went to a park. Karen played in the sandbox for a while. And then she met ______ beautiful, friendly boy – he was very well behaved, and Karen played with him for almost an hour.

(14). [−definite, −specific]

After school

Father: Do you have any homework?

Child: Yes, I need to write a book report.

Father: So what will you read?

Child: Hmm… I don’t know yet. But I like to read about things that move – cars, trains… I know! I would like to read ______ book about airplanes! I’ll go to the library tomorrow!
SPRT

For the SPRT, 16 of the 48 dialogues used in the AET were selected based on length and simplicity and rotated across the same four contexts, in addition to the manipulation of grammaticality. That is, each dialogue appeared once in a match condition and once in a mismatch condition in all contexts. To create the mismatch conditions, this study crossed the *article choice* factor with the *article context* factor (see Example 15).

(15). [+Definite, +Specific]

**Match condition**

(article choice = the)

At a bookstore
Chris: Well, I’ve bought everything that I wanted. Are you ready to go?
Mike: Almost. Can you please wait a few minutes? I want to talk to a very nice lady who I always say hi to. She is the manager of this bookstore.

**Mismatch condition**

(article choice=a)

At a bookstore
Chris: Well, I’ve bought everything that I wanted. Are you ready to go?
Mike: Almost. Can you please wait a few minutes? I want to talk to a very nice lady who I always say hi to. She is *a* manager of this bookstore.

The rotation of items, along with the generation of matched and mismatched versions of each item, yielded eight lists in total. The list had a between-item design in which, for instance, Participant 1 would see half the items from Condition A and half the items from Condition B, and Participant 2 would see exactly the opposite; each participant saw each item only once.

It is important to note that in each dialogue, the experimental manipulation appeared in the last sentence in more than 90.0% of the items. That is, the last sentence established the context of the critical NP. In some cases, it was impossible to maintain the location of the experimental manipulation without altering semantic context, which resulted in the remaining 10.0% of the items. Moreover, since the dialogues were adopted from Ionin et al. (2009), the number of words in each item varied, as any adjustments intended to make the number of words across all items uniform would likely have impacted the semantic context. Therefore, this study prioritised maintaining the proper semantic context for each article over the number of words and their location in
each experimental item.* Considering this factor, this study marked the
noun that followed the article as the critical region (Region 1) and the
sentence-final word as the spill-over region (Region 2). Both regions
appeared in the final sentence of each experimental item. Examples (16)
and (17) below illustrate this point.

(16). [+Definite, −Specific]
At the end of a foot race
Laura: Are you ready to leave?
Betsy: No, not yet. I don’t know who is playing today. I’m
writing a report about this, and I need to talk to the winner
of this race.

(17). [+Definite, +Specific]
Grandfather comes for a visit
Grandfather: Where is my little granddaughter, Beth? Is she
home?
Father: No, she is not going to be back until late. She is
having dinner with her best friend. It’s Angie, the girl from
her class.

Participants were randomly assigned to one of the eight lists, such
that each list was presented approximately eight times for the L2ers
and three times for the NSs. The experimental items on each list were
counterbalanced using Ibex Farm’s counterbalance feature to ensure that
the items were shuffled and reordered for the participants.

After each experimental item, participants were presented with
a yes/no comprehension question to ensure that they were paying
adequate attention to the task. Participants were seated in a quiet lab
approximately 25 cm from a computer monitor. All experimental
items were presented on a white screen in black font, except for the
yes/no options that appeared after the comprehension questions, which
were in blue font. The task started with a white page that provided
simple instructions for the experiment, followed by a practice question.
Participants were then asked to begin whenever they were ready. The
actual experiment started with blank spaces for the equivalent words

* A possible solution would have been to follow Kim and Lakshman’s (2009) unique method
of calculating RTs for all words in each item in the same context, calculating the total, and
then computing the mean for each item. However, their method could not be applied to
this research given the much higher word number variance. Ignoring the variance would
have resulted in masking the actual results for each condition.
in each experimental item displayed in the middle of the screen, and participants were asked to use the spacebar to make the words appear. Short conversations were presented one word at a time. Each press of the spacebar caused the previous word to disappear (see Fig. 1).

**Figure 1**
*Session Illustration for the one-word-at-a-time Presentation of the SPRT*

The yes/no comprehension questions following each experimental item were unrelated to the experimental manipulation and were only included to ensure that participants were not distracted. To ensure that the experimental items were well masked and that the participants could not make any generalisations, the correct answers to the comprehension
questions were equally split between ‘yes’ and ‘no’. The participants were also presented with the same 24 fillers from the AET, in addition to the experimental items. Participants were directed to use their mouse to click on yes/no to answer the comprehension questions, as illustrated in Figure 2.

Figure 2
*Session Illustration for the Comprehension Questions in the SPRT*

![progress](image)

Did Robin visit his family?
1. Yes
2. No

Using the embedded Ibex Farm feature, we measured reaction times for all the words presented to participants and then extracted words/regions of interest. We then compared the reaction times across the four contexts and between groups in both the match and mismatch conditions. For the full SPRT dataset, see Sabir and Melebari (2023b).

**Data Analyses**

To explore the effect of specificity in the AET, analyses of variance (ANOVAs) were run for the L2ers and the NS control group regarding the use of *the* and *a/an*. For the SPRT, ANOVAs were run to explore article choice (*the* vs. *a/an*) in each article context (definite specific, definite nonspecific, indefinite specific, and indefinite nonspecific) as independent variables, with (RT) as a dependent variable. For each context, there was the condition of matched (felicitous) vs. mismatched (infelicitous) article choice, creating a 2x4x2 design.
Results

AET

In each test context, each participant was given a total score (out of six). Overall, the AET descriptive data show that learners’ scores were relatively low in the *indefinite specific* context compared to the other three contexts, as can be seen in Table 2.

Table 2
AET Descriptive Results for L2ers and NSs

<table>
<thead>
<tr>
<th>Context</th>
<th>Definite specific</th>
<th>Definite non-specific</th>
<th>Indefinite Specific</th>
<th>Indefinite non-specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>L1 Hejazi Arabic learners of L2 English</td>
<td>68</td>
<td>4.59</td>
<td>1.55</td>
<td>3.94</td>
</tr>
<tr>
<td>Native control</td>
<td>23</td>
<td>6</td>
<td>0</td>
<td>5.69</td>
</tr>
</tbody>
</table>

Note: N = number; M = mean; SD = standard deviation

Separate repeated-measures (RM) ANOVAs were conducted on the use of the vs. a/an for the L2ers and the NS control group. The NSs’ results, as reported in Table 3, show that they performed as expected. The effect of definiteness was found to be highly significant, indicating that a clear distinction between [+definite] and [– definite] in terms of article use. In contrast, there was no statistical significance for the specificity variable or for crossing definiteness with specificity when testing the use of a. As expected, there was no fluctuation in article choice between a and the. Statistical significance was found when definiteness was crossed with specificity when testing the use of the, which suggests that NSs may be selecting the incorrect article due to failure to focus on the task, particularly because the semantic context manipulation was placed towards the end of each dialogue.

The L2ers’ results, as shown in Table 4, indicate that the effect of definiteness is highly significant. The effect of specificity on the use of both *the* and *a/an* is also highly significant. Therefore, L2ers fluctuated between *the* and *a/an*. The interaction between definiteness and specificity was also significant.
Я хочу вийти заміж за *торгового банкіра: Експеримент...

### Table 3
Results of RM ANOVAs for the NS Control Group

<table>
<thead>
<tr>
<th>Factor</th>
<th>Use of the</th>
<th></th>
<th></th>
<th>Use of a</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Df</td>
<td>F value</td>
<td>Adjusted p value</td>
<td>Df</td>
<td>F value</td>
<td>Adjusted p value</td>
</tr>
<tr>
<td>Definiteness</td>
<td>1</td>
<td>5.808</td>
<td>&lt; .001</td>
<td>1</td>
<td>3.480</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Specificity</td>
<td>1</td>
<td>.518</td>
<td>.58</td>
<td>1</td>
<td>.042</td>
<td>.84</td>
</tr>
<tr>
<td>Definiteness x specificity</td>
<td>1</td>
<td>9.86</td>
<td>&lt; .01</td>
<td>1</td>
<td>2.78</td>
<td>.11</td>
</tr>
</tbody>
</table>

### Table 4
Results of RM ANOVAs for L2ers

<table>
<thead>
<tr>
<th>Factor</th>
<th>Use of the</th>
<th></th>
<th></th>
<th>Use of a</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Df</td>
<td>F value</td>
<td>Adjusted p value</td>
<td>Df</td>
<td>F value</td>
<td>Adjusted p value</td>
</tr>
<tr>
<td>Definiteness</td>
<td>1</td>
<td>2.5959</td>
<td>&lt; .001</td>
<td>1</td>
<td>6.7353</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Specificity</td>
<td>1</td>
<td>5.082</td>
<td>&lt; .001</td>
<td>1</td>
<td>3.10</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Definiteness x specificity</td>
<td>1</td>
<td>3.98</td>
<td>&lt; .05</td>
<td>1</td>
<td>2.19</td>
<td>&lt; .001</td>
</tr>
</tbody>
</table>

**SPRT**

The data analysed in this section were obtained from the two regions that were selected based on where we expected to see the processing cost. Given that L2 learners would need to process the noun that follows the article in order to detect a mismatch, we identified this as the critical region (Region 1), and given that the sentence-final word marked the end of a complete thought, it was selected as the spill-over region (Region 2) in order to catch any spill-over effect (Roberts 2003; Roberts & Lizka, 2013). This region was selected to keep the experimental design consistent since function words separated the noun that followed the article and the sentence-final word.

**SPRT Descriptive Statistics**

The SPRT descriptive results reveal differences in reaction times between the NSs and L2ers in all four contexts in the two regions under match and mismatch conditions (see Table 5). Overall, L2ers’ reaction times were much longer than NSs’. Furthermore, NSs had longer reaction times under the mismatch conditions (with a few exceptions), whereas L2ers showed variation under the match and mismatch conditions across the four contexts.
Table 5

*Mean Reaction Times (in ms) Under the Match and Mismatch Conditions for NSs and L2ers Across the four Contexts in Regions 1 and 2*

<table>
<thead>
<tr>
<th>Context: Match condition</th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 1</th>
<th>Region 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+] definite, +specific</td>
<td>280</td>
<td>400</td>
<td>607</td>
<td>686</td>
</tr>
<tr>
<td>[+] definite, –specific</td>
<td>308</td>
<td>500</td>
<td>622</td>
<td>741</td>
</tr>
<tr>
<td>[–] definite, –specific</td>
<td>384</td>
<td>455</td>
<td>659</td>
<td>690</td>
</tr>
<tr>
<td>[–] definite, +specific</td>
<td>330</td>
<td>300</td>
<td>730</td>
<td>680</td>
</tr>
</tbody>
</table>

Descriptive statistics

<table>
<thead>
<tr>
<th>Match condition</th>
<th>Mismatch condition</th>
<th>Region 1</th>
<th>Region 2</th>
<th>Region 1</th>
<th>Region 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native speakers</td>
<td>L2 learners</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[+definite, +specific]</td>
<td>291</td>
<td>130</td>
<td>610</td>
<td>239</td>
<td>430</td>
</tr>
<tr>
<td>[+definite, –specific]</td>
<td>318</td>
<td>161</td>
<td>631</td>
<td>275</td>
<td>490</td>
</tr>
<tr>
<td>[–definite, –specific]</td>
<td>382</td>
<td>145</td>
<td>695</td>
<td>272</td>
<td>469</td>
</tr>
<tr>
<td>[–definite, +specific]</td>
<td>373</td>
<td>162</td>
<td>700</td>
<td>229</td>
<td>425</td>
</tr>
</tbody>
</table>

By combining the match and mismatch conditions across grammaticality (Table 6), this study compared each group’s longest reaction times. For NSs, the longest reaction time was 382 ms in the [–definite, –specific] context in Region 1 and 490 ms in the [+definite, –specific] context in Region 2. On the other hand, the longest reaction time for L2ers was 700 ms in the [–definite, +specific] context in Region 1, but this effect changed in Region 2, in which L2ers exhibited more target-like behaviour, with the longest reaction time at 786 ms in the [+definite, –specific] context, similar to NSs. Figures 3 and 4 visually present these effects.

Table 6

*Mean Reaction Times (in ms) and Standard Deviations for NSs and L2ers Across the four Contexts in Regions 1 and 2 Combining Match and Mismatch Conditions*

<table>
<thead>
<tr>
<th>Context: Match and mismatch combined</th>
<th>Region 1</th>
<th>Region 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native speakers</td>
<td>L2 learners</td>
<td></td>
</tr>
<tr>
<td>Mean RT SD</td>
<td>Mean RT SD</td>
<td></td>
</tr>
<tr>
<td>[+definite, +specific]</td>
<td>291</td>
<td>130</td>
</tr>
<tr>
<td>[+definite, –specific]</td>
<td>318</td>
<td>161</td>
</tr>
<tr>
<td>[–definite, –specific]</td>
<td>382</td>
<td>145</td>
</tr>
<tr>
<td>[–definite, +specific]</td>
<td>373</td>
<td>162</td>
</tr>
</tbody>
</table>
To explore whether L2ers’ reaction times were on target, this research examined the absolute difference in reaction times between L2ers and NSs in each context in both the critical and the spill-over regions. The graph in Figure 5 shows that the widest difference between the two groups was in the [–definite, +specific] context.
Numerous ANOVAs were run to identify the effects and determine whether they supported the research predictions. The first analysis examined the effect of grammaticality (under match vs. mismatch conditions) and group (NSs vs. L2ers), the results of which are presented in Table 7. Generally, no statistical significance was found for grammaticality, although the NSs’ mean reaction times were much shorter than those of L2ers.

Table 7
Two-way ANOVA (grammaticality and group) for Regions 1 and 2

<table>
<thead>
<tr>
<th>Region 1</th>
<th>Region 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>Df</td>
</tr>
<tr>
<td>Grammaticality</td>
<td>1</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
</tr>
</tbody>
</table>

A second ANOVA was run to examine the effects of context ([+definite, +specific], [+definite, –specific], [–definite, –specific], and [–definite, +specific]) and group (NSs vs. L2ers). As Table 8 illustrates, a main effect of group was observed in both the critical and spill-over regions, and a significant effect of context was observed in Region 1.
and confirmed in Tukey tests with multiple comparisons, the results of which show that those differences were statistically significant (see Table 9).

Table 8
Two-way ANOVA (context and group) for Regions 1 and 2

<table>
<thead>
<tr>
<th></th>
<th>Region 1</th>
<th>Region 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Df</td>
<td>F value</td>
</tr>
<tr>
<td>Context</td>
<td>3</td>
<td>2.27</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
<td>161.29</td>
</tr>
<tr>
<td>Context x group</td>
<td>3</td>
<td>0.015</td>
</tr>
</tbody>
</table>

Table 9
Tukey HSD multiple comparisons of means for NSs and L2ers in Region 1

<table>
<thead>
<tr>
<th>Mean difference</th>
<th>Lower 95.0% CI</th>
<th>Upper 95.0% CI</th>
<th>Adjusted p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+definite, –specific] NSs and L2ers</td>
<td>313.68</td>
<td>161.32</td>
<td>466.03</td>
</tr>
<tr>
<td>[+definite, +specific] NSs and L2ers</td>
<td>319.29</td>
<td>167.11</td>
<td>471.47</td>
</tr>
<tr>
<td>[–definite, –specific] NSs and L2ers</td>
<td>313.56</td>
<td>161.38</td>
<td>465.74</td>
</tr>
<tr>
<td>[–definite, +specific] NSs and L2ers</td>
<td>326.51</td>
<td>174.75</td>
<td>478.27</td>
</tr>
</tbody>
</table>

The results of the ANOVA also suggest that there was no two-way interaction between group and context in Region 1, confirming the reported effects for both NSs and L2 learners. Furthermore, the SPRT results reveal significant differences in reaction times between NSs and L2ers regardless of context.

In summary, the between-group comparisons of the SPRT results show a main effect of group and context but no significant interaction between the two and no significant effect of grammaticality. Overall, L2ers’ reaction times were much longer than NSs’. Based on the absolute difference in reaction time between NSs and L2ers, the widest gap between the two (i.e. the most off-target effect) was in the [–definite, +specific] context.

* Since grammaticality was insignificant, the data reported in the inferential statistics results consisted of data for the match and mismatch conditions combined.
Discussion

In line with the findings of Almahboob (2009) and Sabir (2018), who tested learners’ explicit knowledge of English articles, the results of the AET (offline measure) evidence the effect of specificity on Hejazi Arabic-speaking learners’ article choice, as predicted. Learners fluctuated between the use of *a* and *the* in the *indefinite specific* context in a manner similar to L2 learners of (−ART) languages based on Ionin et al.’s (2004) predictions. This performance shows that our L2ers did not exhibit targeted behavior in the *indefinite specific* context, which indicates that their explicit knowledge of English articles is not yet fully developed. Sabir (2018) has argued that this finding challenges the findings of studies on L2 learners from +ART L1s (García Mayo, 2009; Hawkins et al., 2006; Sarko, 2009; Snape, 2006). According to Sabir (2018), the explanation for these contradictory results may lie in the linguistic characteristics of Arabic articles. Specifically, there might be evidence of L1 transfer due to Arabic’s lack of an indefinite article or the possible presence of a specificity marker in the spoken variety; however, both of these claims require further investigation. One possible justification for why native speakers of Hejazi Arabic misuse articles in the [−definite, +specific] context may be related to “overgeneralization errors that might have resulted from previous linguistically inaccurate standard instruction, which usually uses the term specific as a synonym for definite” (Sabir, 2018: 158). Ionin et al. (2009) elaborated on this and described it as the effect of explicit strategy, which may explain why learners overuse *the* in [−definite, +specific] contexts.

In contrast to Sarko’s (2009) findings, this study’s participants fluctuated in [−definite, +specific] contexts in the absence of relative clause modification, which rules out the effect of L1 transfer, upon which Sarko’s postulation relies. This finding is clear evidence in support of the prediction that Arabic lacks an indefinite article (D), which gives it a status similar to that of −ART languages. However, this finding may be generalised more accurately through further investigations on the presence of a specificity marker in spoken Hejazi Arabic. If there is a specificity marker in spoken Arabic, it would suggest negative transfer from L1 to L2.

The SPRT results produced two key general findings. The first finding is that, as predicted, there was no statistically significant
grammaticality effect between the match and mismatch conditions for both groups. In line with Ionin et al.’s (2021) findings, this research attributes the absence of this effect to the fact that match and mismatch cases can be more accurately referred to as felicitous vs. infelicitous. In other words, the use of the article is not ungrammatical in those sentences but rather infelicitous based on the context. Therefore, it is possible that participants could not detect this infelicity until the context had been established. The second general finding of this study is that the L2ers showed main effects of group and context. The fact that these learners had longer reaction times regardless of context strongly supports the assumption that L2ers exhibit longer latencies because they are processing a second language as opposed to a first language (Martin et al., 2013; Pérez & Bajo, 2018).

The between-group reaction time differences in each context and the differences in the RTs of NSs and L2ers reveal some positive effects for L2ers’ sensitivity to specificity. Recall that the [–definite, +specific] context most saliently highlights a specificity-over-definiteness processing preference. Therefore, showing an effect in this particular context means that the participants were sensitive to the presence of the specificity feature. As the absolute difference results in Figure 5 show, the widest difference between the two groups was observed in the [–definite, +specific] context in both regions. The NSs were faster, whereas our L2ers were significantly slower in this context. Furthermore, L2ers did not exhibit a target-like effect and had difficulty reading the correct usage of a and the incorrect usage of the in the [–definite, +specific] context; as discussed with respect to the AET results, they might be confusing specificity with definiteness due to having previously received incorrect classroom instruction. Thus, the SPRT results suggest that our L2ers’ article usage performance in this context was not target-like, which suggests that their online/implicit knowledge of English articles has not yet developed. Although the descriptive results evidence this, the Tukey post hoc test results did not support learners’ sensitivity to specificity in the [–definite, +specific] context. In fact, the L2ers’ reaction times differed significantly from the NSs’ in all four contexts. Such results may be attributed to the methodological issues we will highlight later in this section.

The results of this study challenge the existing research on learners from +ART language backgrounds (García Mayo, 2009; Hawkins et al.,
2006; Sarko, 2009; Snape, 2006) and support the argument Almahboob (2009), Sarko, (2009), Kim and Lakshmanan (2009), Ahn (2019), and Sabir (2018) have proposed. That is, L2ers’ fluctuation in the AET and the wider gap between them and NSs in the [−definite, +specific] context suggest that the former have difficulty with this context both implicitly and explicitly. The findings support Sarko’s (2009) and Sabir’s (2018) claim that Hejazi Arabic seems to be structurally identical to −ART languages (with an absent D node), which is a possible explanation for why L2ers fluctuated in the [−definite, +specific] context.

This research has some limitations. First, this study used Ionin et al.’s (2004) AET experimental items, which place semantic context near the end of the dialogue. Hence, conducting the SPRT was challenging because participants are usually presented with short sentences or word pairs, not long conversations. However, it was not possible to use short sentences and individual words and maintain the semantic context. Therefore, this research only examined two regions when analysing the results, namely the noun that follows the article and the sentence-final word. Second, according to the results, the NSs and L2ers showed no significant effect for grammaticality, which may undermine the validity of the SPRT, though this finding could be attributed to the fact that “…we are now dealing with infelicity in context, rather than straightforward ungrammaticality” (Ionin et al. 2021: 140), which makes it difficult for participants to decide whether the article has been used in the correct context. Finally, the fact that the L2ers’ reading times were almost double the NSs’ may suggest that their reading times do not reflect implicit processing. In fact, explicit processes may very well be in play in this task. This study is meritorious despite its limitations as it is the first study to examine how Hejazi Arabic (+ART) speakers process English articles.

**Conclusion and Future Directions**

In conclusion, the purpose of this study was to explore whether Hejazi Arabic speakers’ explicit knowledge of English articles mirrored their implicit knowledge and determine whether they transferred L1 knowledge or fluctuated when using English articles. The results of comparing L2ers’ fluctuation in the AET in the [−definite, +specific]
context with their performance in other contexts and with that of their NS counterparts, along with the fact that the widest difference between the two groups was observed in the [−definite, +specific] context, were interpreted as an indication that the English L2ers have not acquired the English article system implicitly and explicitly and that they process English articles, at least initially, based on specificity and not definiteness, suggesting that Hejazi Arabic’s lack of an indefinite article means that it is structurally classifiable among −ART languages (with an absent D node).

We recommend that future research consider the methodological issues we have highlighted regarding designing an online task in which the semantic context is clearly marked. This topic can be pursued in several ways. One would be to examine L2 learners with varying levels of English proficiency and compare their results to determine whether a different effect is observed among advanced learners (Ionin et al., 2021; Kim & Lakshmanan, 2009). Another way would be to recruit participants that speak different varieties of Arabic to further investigate the possible presence of a specificity marker in spoken varieties. We also recommend using a different online task (such as ERPs or eye-tracking) to replicate the experiment.

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ADHERENCE TO ETHICAL STANDARDS

Ethics declarations. The ethical examination of the conducted empirical research was carried out and it was approved by Research and Ethical Committee of the English Language Institute, King Abdulaziz University. The study was conducted according to the guidelines of the Declaration of Helsinki (1964).

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Conflicts of Interest. The authors declare no conflict of interest.

Author contributions. Sabir M.: the idea, modeling of the theoretical concept and general design of the research, formulation of goals and objectives of the research, general organization of empirical research, organization of the Article Elicitation Task, analysis of the task, interpretation of data of the research, writing abstracts.
to the article, reviewing, and editing the article, preparation of the final version of
the manuscript, submission of data to the international repository. **Melebari A.:**
organizing the Self-paced Reading Task, the selection of the software, data collection,
preparation of documents and collection of informed consent from the participants of
the experiment, selection of stimulus material, compliance with ethical standards of
the experiment, interpretation of data of the research.

**Consent for Publication.** The authors jointly consent for the manuscript to be
published by the journal.

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Я хочу вийти заміж за *торгового банкіра: Експеримент...


АНОТАЦІЯ

Мета. Це дослідження вивчає обробку англійських артиклів носіями хеджазької арабської мови, мови, в якій є артикль. Дослідження має на меті відповісти на питання, чи є офлайнові (експліцитні) знання специфіки вибору англійського артикля дзеркальним відображенням онлайнових (імпліцитних) знань. Існуючі дослідження виявили, що гензус-араби, які вивчають англійську мову, неправильно вживають артикль у невизначеному специфічному контексті, відповідаючи на письмове завдання; однак їхні результати є цільовими у всіх інших контекстах вживання артиклів, що вказує на те, що їхня продукція може бути чутливою до специфіки, подібно до продукції учнів з мов, які не

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мають артикілів. Однак, мало що було зроблено для вивчення цього явища за допомогою онлайн-вимірювань.

Методи. Щоб відповісти на дослідницькі питання, було набрано 68 носіїв хеджазі-арабської мови та 23 носії англійської мови. Учасники та носії англійської мови виконали завдання на пошук статей та завдання на самостійне читання.

Результати. Результати завдання на пошук статей свідчать про надмірне вживання учнями неозначеного відмінка в конкретному контексті, що узгоджується з висновками існуючих досліджень. Аналогічно, результати обробки в реальному часі вказують на більший розрив у часі реакції між носіями мови та тими, хто вивчає мову L2, у невизначеному конкретному контексті, що свідчить про те, що в цьому контексті студенти не досягають бажаних результатів.

Висновки. Дослідження показало, що онлайн-знання англомовних статей хеджазькою арабською мовою демонструють певну схожість з їхніми знаннями в офлайні. Також обговорюються теоретичні висновки та методологічні питання.

Ключові слова: опрацювання англомовних статей, самостійне читання, визначеність, специфічність, імпліцитні знання, експліцитні знання.