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THE TEACHING OF ESP LEXIS REVISITED: THE EFFECT OF AUTHENTIC TEXT ADAPTATION ON VOCABULARY RETENTION

Abstract

The pedagogical value of authentic materials and learners' positive attitudes toward such materials stand opposed to adapted materials, which lend themselves easily to language learning. Our research question focuses on the effect of authentic text adaptation on vocabulary retention among university-level students of Maritime English. Our study aims to answer the question of whether learners are more likely to retain new lexis when it is presented in adapted texts as opposed to authentic texts. The written instrument, in the form of a questionnaire, was administered in three separate parts: the Pre-test, which served to test participants' prior knowledge of the target vocabulary; the Main Text, a reading text administered in either authentic (Auth) or adapted (Adapt) version (with text adaptation following the Borucinsky and Jelčić Čolakovac's [2020] methodological steps); and the Post-test in the form of a cloze-type task, which tested students' vocabulary retention. Our results showed that retention performance was higher with the Adapt text than with the Auth text (p <.001). The Adapt text provided participants with a simplified context, making it easier for them to memorize the tested vocabulary and apply it in a new context with higher accuracy.

Key words

vocabulary retention, ESP, authentic materials, adapted materials, adaptation strategies.

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1. INTRODUCTION

One of the biggest challenges in English for Specific Purposes (ESP) for both teachers and learners is the selection of appropriate materials, primarily the choice between authentic and adapted materials. As Marjanoviki-Apostolovski (2019: 161) states, this is "a typical feature of ESP courses, mainly because of the attempt to offer teaching materials which fit specific subject area and specific needs of a certain group of students". Vičič (2011: 110) claims that the importance of material selection lies in its "practical result of effective course development" and the knowledge gained from appropriate materials that learners will need in their careers. Whether to choose authentic or adapted materials depends largely on the needs and abilities of learners and teachers in a particular ESP teaching context. Extensive research (Borucinsky & Jelčić Čolakovac, 2020; Ghanbari, Esmaili, & Reza Shamsaddini, 2015; Spirovska Tevdovska, 2018; Tominac Coslovich & Borucinsky, 2010; Torregrosa Benavent & Sánchez-Reyes Peñamaría, 2011) has been conducted on both types of materials and the selection process, focusing on appropriateness in relation to learners' needs and proficiency levels as well as the effect of authentic and adapted materials on motivation. According to Torregrosa Benavent and Sánchez-Reyes Peñamaría (2011: 93), authentic materials "motivate and immerse learners in specific areas of the target language in which practice is needed". Authentic materials can motivate learners by providing the feeling of "being able to decipher an authentic material", thus giving "the student the motivation that would make him a better learner" (Buzarna-Tihenea & Nădrag, 2018: 147).

Choosing between different types of materials is particularly important when it comes to teaching vocabulary. As Coxhead (2013) writes, specialized vocabulary is expected to have a limited range of uses, specific to a certain academic or professional setting, even if some of the vocabulary is found in the language we use every day. Whether authentic or adapted materials are chosen for vocabulary instruction depends very much on the needs and proficiency level of the learners. Coady (1997: 229) mentions the "beginner's paradox", wondering how a learner can "learn enough words to learn vocabulary through extensive reading when they do not know enough words to read well". Therefore, implicit vocabulary learning is often more appropriate for higher-proficiency learners, while explicit vocabulary instruction can be implemented with learners of lower-proficiency levels (Han & Ellis, 1998; Khamesipour, 2015).

While numerous studies have been conducted on the advantages and disadvantages of using authentic materials in the classroom (e.g. Islam & Mares, 2003; Kelly et al., 2002; Torregrosa Benavent & Sánchez-Reyes Peñamaría, 2011, etc.), there has been less extensive research on the strategies and procedures of adapting materials for classroom use (e.g. Borucinsky & Jelčić Čolakovac, 2020; Islam & Mares, 2003; Marjanovikj-Apostolovski, 2019) as well as manipulating the levels of authenticity in teaching materials. This paper aims to review the relevant literature and studies on the concept of authenticity, with a focus on defining how

ESP materials are created by examining adaptation strategies in material design. The study examines the effect of authentic text adaptation on the retention of specialized vocabulary, while presenting specific text adaptation procedures.

2. THEORETICAL BACKGROUND

2.1. Authentic vs. adapted materials

The concept of authenticity has been defined in numerous ways. Velazquez (2007: 133) states that authentic materials or texts are most often defined as those "that are written for native speakers and usually by native speakers". The author further claims that such materials "provide students with everyday use of language and experiences in the target culture" (Velazquez, 2007: 133). In the author's view, then, authentic materials represent language instances that are intended to convey a message between native speakers. However, as English is a lingua franca, this definition fails to encompass the majority of English language speakers who are not native, but at the proficiency level that enables them to understand such materials. In his review of different perspectives on the meaning of authenticity, Gilmore (2007) concludes that the concept of authenticity can be situated in "either the text itself, in the participants, in the social, or in the cultural situation and purposes of the communicative act" (Gilmore, 2007: 98). Morrow (1977: 13) defines authenticity as instances of "real language from a real speaker/writer for a real audience with a real message". However, when we define authenticity in this way, we still are faced with the issue of distinguishing between various "surface discourse features" (Morrow, 1977: 13) and the quality of input for stimulating language acquisition in numerous authentic materials such as small talk or even business negotiations and marketing campaigns. Even though authentic materials are primarily communicative in their purpose, they can also be used for instructive purposes. Blagojević (2013) writes that while authentic language samples can be used for teaching purposes, the "controversy" that arises from such a statement concerns the question of whether authentic materials remain authentic when used in a teaching context and whether they are used "in the way which is not authentic and does not reflect the real language use, but just imitates it" (Blagojević, 2013: 115-116).

The instructive purpose is emphasized in the adapted materials, which present simplified language, respond to learners' needs and adapt to their language proficiency. Tomlinson (2003: 5) claims that such materials aimed at explicit learning usually "contrive examples of the language which focus on the feature being taught". He further states that such pieces of texts help the learner to focus on the target language feature in question. Similarly, Berardo (2006: 61) claims that adapted or "non-authentic texts" differ from authentic materials in their purpose, as

they are intended for teaching and learning specific language structures that are unlikely to occur or be used in real-life communicative situations. While authentic materials focus on the communicative role, adapted materials have primarily an instructive function and focus on the needs of learners and teachers.

Authentic materials in EFL, specifically in ESP, are considered a valuable tool for presenting learners with realistic communicative situations they might encounter in their field of research or work. Tominac Coslovich and Borucinsky (2010) state that the educational value of authentic materials is that they provide both teachers and learners with insights into language change as well as changes outside the classroom related to current events or relevant disciplines or areas of study when used in an ESP classroom. In addition, Kelly et al. (2002) point out that they have found that authentic materials bring realistic language into the classroom; by exposing learners to the specifics of the target language culture, a more positive learning attitude develops. Torregrosa Benavent and Sánchez-Reyes Peñamaría (2011) conclude that authentic materials motivate learners in certain language areas where they might need additional practice. David and Serban-Oprescu (2019) state that authentic materials offer linguistic and socio-cultural benefits, such as "improved language acquisition and language use, better understanding of how language works in specific contexts, enhanced communication skills or increased cultural awareness" (David & Şerban-Oprescu, 2019: 168), as well as psychological benefits in the form of increased motivation, self-esteem, improved "autonomous" learning skills and a "sense of achievement" (David & Şerban-Oprescu, 2019: 169). 78

On the other hand, authentic materials can pose comprehension problems for learners whose proficiency is insufficient to fully grasp the meaning of an authentic text and the specialized vocabulary it contains. According to David and Serban-Oprescu (2019), exposing learners to an inappropriate amount or type of authentic materials can be counterproductive. Moreover, teachers have difficulty in selecting materials which are appropriate both in length and complexity in terms of grammar and vocabulary. In addition, Tominac Coslovich and Borucinsky (2010) emphasize that lower-level learners may have difficulty with authentic materials because of the mixed structures of the language. The use of authentic materials in the classroom might therefore not motivate learners but have the opposite effect and hinder their language learning progress. Other language-specific issues may also arise when learners are confronted with such authentic materials. A survey conducted by Vaičiūnienė and Užpalienė (2010: 96) showed that ESP students dealing with such materials have difficulty understanding specific vocabulary that may not be "relevant to the students' immediate needs"; factors such as "natural intonation, repetition of forms and phrases, redundancy, dialects, a little overlap between speakers, incomplete sentences" (Vaičiūnienė & Užpalienė, 2010: 96) cause problems in understanding authentic materials. Torregrosa Benavent and Sánchez-Reves Peñamaría (2011) conclude that it is difficult to adapt authentic materials to learners at beginner level and that they need to be constantly updated to meet the ever-changing learners' needs. Furthermore, Velazquez (2007: 137) claims that the

use of simplified texts "reinforces vocabulary and grammar and prepares students for reading authentic texts".

However, the selection and design of such simplified material could pose a problem for teachers. Blagojević (2013) discusses ideas for providing appropriate authentic materials and designing coursebooks for ESP philosophy students at the University of Niš in Serbia. She points out that designing adequate ESP coursebooks is a complex process and explains that such coursebooks should "facilitate the understanding of complex texts and help further development of language skills by performing the language tasks which correspond to authentic language activities" (Blagojević, 2013: 124). Therefore, the combination of authentic materials and adapted materials in the ESP coursebooks should motivate learners and help them develop their language skills such as translation, summarizing, and reading comprehension skills.

2.2. Summary of research studies

Various studies have been conducted on the effect of authentic and adapted materials on learner motivation and achievement. Potočnik Topler (2014) investigated students' opinions on the use, advantages and disadvantages of coursebooks and authentic materials in the teaching of ESP at the Faculty of Tourism, University of Maribor, Slovenia. Participants were 110 first- and secondyear students enrolled in the Bachelor's programme whose opinions were collected through questionnaires and interviews. The results showed that students preferred authentic materials as they found them to be much more motivating (despite the demanding language instances they contained) compared to coursebooks where motivation was moderate or non-existent. Similarly, the study by Spirovska Tevdovska (2018) investigated ESP teachers' opinions about the materials used in the ESP context. A questionnaire on preferred materials in tertiary ESP education was administered. The results showed that most participants found the process of selecting appropriate materials very important for the ESP teaching and learning process. They also indicated that they considered coursebooks for certain subject areas (namely Computer Science and Business Informatics) useful, but sometimes outdated. Moreover, coursebooks should be appropriate to the learners' proficiency levels and needs, which makes it difficult for teachers to select the most suitable ones. Most participants were aware of the benefits of authentic materials, such as the greater motivation and sense of relevance of such materials among learners, but they also emphasized the challenge that authentic materials pose in the ESP classroom in terms of their appropriateness for different levels of language proficiency. Another study looked at the effect of ICT (Information and Communications Technology) and authentic materials use on reading comprehension among ESP learners (Borucinsky & Jelčić Čolakovac, 2020). The participants in the study were first-year students at the Faculty of Maritime Studies

at the University of Rijeka, Croatia. For the main experiment, participants were divided into two groups; one group received an authentic text, the other an adapted version of the same source text. The results of the motivational pre-survey showed a positive correlation between authentic materials and motivation. However, in the main study, the group that received the adapted version of the text scored better on the reading comprehension test than the group that received the authentic text. The authors concluded that adapted texts have better readability because of the simpler vocabulary and repetitive structures. They explained that not all language skills benefit equally from the use of authentic materials, with adapted materials having an advantage in the instruction of vocabulary and language structures.

On the other hand, some research findings show positive effects of authenticity on learners' performance. A study conducted by Ghanbari et al. (2015) focused on vocabulary teaching with authentic materials and its impact on learners' outcomes. Participants were selected according to their proficiency level (basic). Firstly, the Oxford Placement Test was administered. A pre-test was administered to assess the existing knowledge of the target vocabulary and a post-test consisting of the same items, was administered to assess the learners' performance. The learners were exposed to the target vocabulary three times a week in English class for one month. The control group was taught the vocabulary using a coursebook, while the experimental group was taught the same vocabulary using authentic materials, specifically an article published online. The results showed that the experimental group taught with authentic materials achieved better results than the control group 80 taught with adapted materials. The authors point out that there are limitations to the study that need to be taken into account, such as differences in learners' attitudes and motivation, and the quantity of authentic materials they were exposed to.

2.3. Adaptation strategies in ESP material design

Despite extensive research on the advantages and disadvantages of authentic and adapted materials, there are not many studies describing strategies for adapting authentic texts. Various coursebooks may be available, but even if these coursebooks are "systematic, thorough, well-designed and easy to use, [...] many of them lack the energy and imagination required to be considered appealing and relevant" (Marjanovikj-Apostolovski, 2019: 161). Similarly, Howard and Major (2004: 51) state that EFL coursebooks usually "follow a discernible pattern" and "are organised around an identifiable principle". Marjanoviki-Apostolovski (2019: 162) speaks of "tailor-made materials" developed by a particular group of instructors for a particular course and group of learners, which can be developed "either from scratch or by adapting existing learning and authentic materials". The "preparatory stages" of such materials development are "assessment of students' needs and priorities, identification of language elements and pedagogical

approaches, selection of activities to be used, piloting, and/or evaluating the draft version" (Marjanovikj-Apostolovski, 2019: 175). In other words, teachers need to select and evaluate the available materials and develop more appropriate materials as needed by abridging or extending the source materials and then rewriting them to fit the particular classroom needs. In their study on the needs of Spanish higher education ESP teachers, Bocanegra-Valle and Basturkmen (2019) stress that the majority of teachers emphasized the need for appropriate development of suitable materials, whether by adapting available coursebooks or by adapting authentic materials (by creating new materials for learners). In addition, Islam and Mares (2003: 89) emphasized the importance of *adaptation objectives*, which help guide "the choice of adaptation technique(s) as well as help decide the appropriate content or language choice." These objectives include allowing learners to choose their preferred learning method, accomodating different learning styles, emphasizing learner autonomy, promoting "higher-level cognitive skills" and making "language input more accessible" and "engaging" (Islam & Mares, 2003: 89). The authors listed three teaching scenarios in which they proposed different adaptation strategies that could be incorporated into coursebooks as part of the objectives, such as adding a TPR (Total Physical Response) phase to provide "kinaesthetic and auditory input as well as richer, more contextualized text" and presenting reading tasks instead of listening tasks to motivate "higher-order cognitive skills" (Islam & Mares, 2003: 93-99). Borucinsky and Jelčić Čolakovac (2020) also attempted to provide a more detailed overview of interventions made to the authentic version of the text used in 81 their study. The interventions were classified into the following categories of adaptation: insertion of words and phrases, voice transformations, lexical omissions and substitutions, word class substitutions, word order interventions, tense alterations, and cultural adjustment.

When it comes to obstacles in selecting and developing materials for ESP teaching, especially for teaching Maritime English, as Pašalić and Plančić (2018) point out in their evaluation of different Maritime English coursebooks, the biggest obstacle is finding the adapted materials that encompass all the needs of teachers and learners. As there is no 'perfect' coursebook, teachers are forced to evaluate numerous different adapted materials and select authentic materials, which is often a time-consuming endeavour. Jurkovič (2015: 202) notes that while the latter is considered the best option by ESP teachers, it presents an arduous task for those who lack experience in the field and it is more efficient to rely on already existing materials, as certain "international projects in the field of ME have produced interesting, relevant, and available materials for ME teaching". According to Bocanegra-Valle and Basturkmen (2019), the educators' needs in the process of ESP teaching are neglected in many studies on the topic of needs analysis in the ESP context. In their study, participants expressed various needs, which were categorized as: specific training and qualifications in the field of ESP, enhanced disciplinary and pedagogical knowledge, peer collaboration initiatives at various levels, and the provision of continuous professional development opportunities

(Bocanegra-Valle & Basturkmen, 2019: 144). The vast majority of participants stressed the importance of adapting and developing suitable materials to meet the needs of learners, either by adapting materials from existing coursebooks or by using authentic materials. In addition, some participants stated that the amount of materials available varies greatly in different areas, so it is sometimes necessary to develop their own materials as effectively as possible from what is found at their disposal.

3. METHODOLOGY

3.1. Study design

The nature of this study was quasi-experimental; participants were randomly divided into groups beforehand, which was a prerequisite for the Maritime English course they were enrolled in at the time of the study. The experiment was conducted in three separate stages, with each stage taking place one week after the previous one. In the pre-activity stage (Stage 1), the Pre-test was administered to determine whether the participants were already familiar with the vocabulary being tested. In Stage 2, a language lesson was held, focusing on reading comprehension and vocabulary retention. Both groups received the same input from the teacher, with only the reading texts differing between the two groups. One group (Group 1) was presented with the authentic version of a text containing specialized maritime vocabulary (Auth text), while the other group (Group 2) received the adapted version of the same source material (Adapt text). The adaptation strategies used in designing the materials mainly focused on abridging the authentic version, substituting or omitting chosen lexical items from the original text and intervening at the syntactic level by changing the word order in complex sentences (for a detailed description of all adaptation strategies used in material design, see 3.3.). Finally, in Stage 3, both groups were tested on their vocabulary retention one week after the lesson in the form of a post-test that was identical for both groups.

The quasi-experimental design of the present study aims to test the following research hypothesis:

H₁: Learners are more likely to retain new lexis when it is presented in adapted (Adapt) texts as opposed to authentic (Auth) texts.

Any statistical significance of the data collected will be calculated using nonparametric tests and presented in the Results section.

3.2. Study design

The participants of the study (N = 25, mean age 19.96 [SD = 1.21]; 3 female and 22 male participants) were students at the Faculty of Maritime Studies, University of Rijeka, and were all enrolled in the first (n = 17) or third (n = 8) year of the undergraduate Nautical Studies and Maritime Transport Technology programme. All participants were native Croatian speakers who had studied English for about 11.5 years (M = 11.68, min = 5, max = 16, mode = 12). To get an insight into the language profile of our sample, we asked the participants what languages they had learned besides English. Overall 40% of participants indicated that they had studied at least one foreign language in addition to English (28% learned Italian and 12% of the participants learned German as part of their formal education).

In order to enrol in the Nautical Studies and Maritime Transport Technology programme, students have to prove their formal knowledge of the Croatian language and pass a national foreign language exam at A or B level (in accordance with the Croatian national exam levels).¹ The higher (A) level of the Matura examination corresponds to a B2 (upper-intermediate) level, while the basic (B) level corresponds to an A2 (basic) level according to the standard for grading an individual's language proficiency based on the Common European Framework of Reference for Languages (CEFR) (Council of Europe, 2001). All participants chose English for their national foreign language exam. In total, 68% of the participants (*n* = 17) passed the exam at the basic (B) level and 32% of them (*n* = 8) passed the exam at the higher (A) level.

Participation in the study was entirely on a voluntary basis, therefore no course credits were given. All participants were required to read and sign the Informed Consent form. They were also asked to create a personal code which they were asked to provide in each part of the testing (this allowed the researchers to group the data per participant without bringing their anonymity into question).

3.3. Instrument

The instrument used in the study was administered in written form and consisted of three separate parts: the Pre-test, which served to check participants' prior



¹ The State Matura exam in Croatia is a secondary school leaving examination. The exams are managed and organized by the National Centre for External Evaluation of Education (Cro. *Nacionalni centar za vanjsko vrjednovanje obrazovanja – NCVVO*) and is mandatory for all students wishing to enrol in a higher education institution. Croatian State Matura compulsory exams include Mathematics, Croatian language, and a Foreign Language exam, all of which can be taken either at a Higher/Extended level (A) or at a Basic level (B). Each institution sets its own score requirement of the State Matura exams. Foreign Language can be French, English, Spanish, German or Italian, while students who completed their secondary education in a classical gymnasium can also choose Ancient Greek or Latin.

knowledge of the target vocabulary; the Main Text, a reading text administered in either authentic (Auth) or adapted (Adapt) versions; and the Post-test, which served to test vocabulary retention. To avoid any extraneous variables that could have interfered with the results of the study, the same text was used for both the Auth and Adapt conditions, with the researchers intervening in the Adapt version of the reading material. The authentic text chosen for this study was a marine investigation report form. The report described a collision accident at sea and therefore contained maritime vocabulary that is part of the English course curriculum at the Faculty the participants were enrolled in. To ensure that participants were not yet familiar with the target vocabulary, both groups had been given a Pre-test of 45 vocabulary items from the original report form one week before the main study. Students were asked to provide the most appropriate explanation for each item in the Pre-test by giving short explanatory definitions in either English or Croatian. They were also allowed to use Croatian translational equivalents if they so preferred. The responses collected in the Pre-test were analyzed by the researchers and mean scores for familiarity were calculated based on the total number of correct responses for each of the 45 items in the Pre-test. As a result, 20 items with the lowest mean familiarity scores were included in the Post-test (see Table 1). In Stage 2 of the experiment, two (Adapt and Auth) versions of the same source text (maritime accident report) were produced. Both versions contained the same 20 vocabulary items with the lowest familiarity scores from the Pre-test. The Auth version of the maritime report was abridged due to time constraints (only the first few pages of the original text were used, as the original report is over 25 pages long). The text otherwise remained unchanged and no further interventions were made in the Auth version.

On the other hand, a number of interventions were made to the Adapt version of the report, following the Borucinsky and Jelčić Čolakovac's (2020) categorization, which was further developed for the purposes of this study (examples are given in parentheses where such changes were made to the Adapt version of the reading material):

- A. *Word or phrase insertion* (e.g. insertion of relative pronouns: *a vessel that obliged to...*);
- B. *Voice transformation* (e.g. passive-to-active or active-to-passive transformation: *The images were subjected to...* replaced with *They subjected the images to...*);
- C. *Lexical substitution* (e.g. substitution of low-frequency lexical items with synonyms of higher frequency of occurence in a foreign language: *incidental to* replaced with *related to*);
- D. *Lexical omission* (e.g. omission of some words in cases where this does not affect meaning but rather aids comprehension: *his intention to overtake on the starboard side* omitted and replaced with the pronoun *this*);
- E. *Word class substitution* (e.g. adjective-for-adverb replacement: *probable* replaced with *probably*);

- F. *Tense alteration* (e.g. replacement of Present Continuous by Present Simple);
- G. *Syntactic intervention* (e.g. movement of inserted time clauses to the end of a sentence, splitting of a single sentence into two independent ones, etc.: *previous position reporting* replaced with *the reporting of previous position*);
- H. *Cultural adjustment* (e.g. replacement of imperial measures by corresponding international units of measure);
- I. *Adjustment to text representation* (e.g. change of font and/or font size, data representation in tables instead of text, etc.: replacement of capitalized vessel names with lower-case ones).

Next came the reading lesson for the two groups of students, which was kept identical in terms of teacher input and instruction. Each group was presented with the same 20 items in context, with only the context (Auth or Adapt) varying between groups. Group 1 was thus presented with the Auth text, in which the 20 vocabulary items tested in the Pre-test were highlighted. Similarly, Group 2 was presented with the Adapt text, which contained the same highlighted vocabulary. For the main activity, participants in both groups were instructed to read the texts twice. For the first reading, participants were asked to skim the text by focusing on the highlighted items and then read for the general idea on the topic of the text. In the second reading, the participants were instructed to look for specific information and focus on the context in which the vocabulary was presented. They were encouraged to infer the meanings from the context, although no feedback or class discussion followed, as such input could not have been kept identical in both groups. Particular care was taken to ensure that both the Adapt and Auth versions of the reading material were approximately the same length, as the aim was to eliminate the influence of text length on the results. Finally, participants' retention of new lexis was tested using a cloze test where students were asked to fill in the gaps with the appropriate vocabulary. The cloze test was designed to reflect the topic of the source text (marine report on collision of vessels at sea), with the target vocabulary omitted from the text.

4. RESULTS

4.1. Pre-test

A total of 29 participants took part in the Pre-test (four tests were excluded from further analyses because these participants were not present in Stages 2 and 3 of the study). The mean scores of the correct responses collected for each of the 45 items in the Pre-test are shown in Table 1. The 20 items with the lowest familiarity means were included in the main testing.



Vocabulary Item	Mean Correct Responses	Standard Error	Standard Deviation	Sample Variance	
(to) apportion	.00	.00	.00	.00	
hereinafter	.00	.00	.00	.00	
abrasion	.00	.00	.00	.00	
adhesion	.00	.00	.00	.00	
congested	.00	.00	.00	.00	
synopsis	.04	.04	.20	.04	
recessed	.04	.04	.20	.04	
guard frame	.04	.04	.20	.04	
excerpt	.04	.04	.20	.04	
ferromanganese	.08	.06	.28	.08	
lateral	.08	.06	.28	.08	
amendment	.13	.07	.34	.11	
bulwark	.17	.08	.38	.14	
(to) steady	.17	.08	.38	.14	
apparatus	.21	.08	.41	.17	
occurrence	.21	.08	.41	.17	
vicinity	.25	.09	.44	.20	
foremast	.25	.09	.44	.20	
steering stand	.25	.09	.44	.20	
(to) intercept	.29	.09	.09 .46		
submersion	.33	.10	.48	.23	
(to) appoint	.33	.10	.48	.23	
decelerate	.33	.10	.48	.23	
collapse	.33	.10	.48	.23	
destined	.33	.10	.48	.23	
(to) entrust	.33	.10	.48	.23	
bearing	.38	.10	.49	.24	
(to) sustain	.38	.10	.49	.24	
casualty	.38	.10	.49	.24	
dent	.50	.10	.51	.26	
shell plating	.50	.10	.51	.26	
fore	.50	.10	.51	.26	
starboard quarter	.58	.10 .50 .25		.25	
latitude	.58	.10	.50	.25	
course above ground	.63	.10	.49	.24	
whistle	.63	.10	.49 .24		
malfunction	.63	.10	.49	.24	
(to) collide	.79	.08	.41	.17	

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(to) resume	.79	.08	.41	.17
rudder	.79	.08	.41	.17
(to) overtake	.88	.07	.34	.11
buoy	.92	.06	.28	.08
injury	.92	.06	.28	.08
pilotage	.96	.04	.20	.04
lighthouse	.96	.04	.20	.04

Table 1. Descriptive statistics for the 45 vocabulary items in the Pre-test (*N* = 25)

4.2. Main study

A total of 25 participants were included in all three stages. Group 1 (Auth group) included 12 students (*mean age* 20.08 (SD = 1.24), 10 male and 2 female students), while 13 students (*mean age* 19.85 (SD = 1.21), 12 male and one female student) were part of Group 2 (Adapt group). The main lesson was conducted one week after the Pre-test had been administered. One week after the main lesson, the Post-test was administered, the results of which were obtained by calculating the mean number of correct responses for each of the 20 items in the testing. The overall results of the Post-test can be seen in Table 2.

Vocabulary Item	Mean Correct Responses	Standard Error	Standard Deviation	Sample Variance	
vicinity	.56	.10	.51	.26	
ferromanganese	.56	.10	.51	.26	
amendment	.44	.10	.51	.26	
(to) apportion	.40	.10	.50	.25	
(to) intercept	.40	.10	.50	.25	
hereinafter	.36	.10	.49	.24	
(to) steady	.36	.10	.49	.24	
adhesion	.28	.09	.46	.21	
abrasion	.28	.09 .46		.21	
bulwark	.28	.09 .46		.21	
steering stand	.24	.09	.44	.19	
recessed	.24	.09	.44	.19	
guard frame	.24	.09	.44	.19	
occurrence	.20	.08	.41	.17	
apparatus	.20	.08	.41	.17	
foremast	.12 .07		.33	.11	

synopsis	.08	.06	.28	.08
congested	.08	.06	.28	.08
lateral	.04	.04	.20	.04
excerpt	.04	.04	.20	.04

Table 2. Total means of correct responses for 20 vocabulary items in the Post-test (*N* = 25)

The item that was most frequently placed in the correct gap in the cloze test was *vicinity* (M = .56), while *excerpt* was the most challenging for participants and was used least frequently in the correct context (M = .04). The results per group are shown in Table 3.

	Auth Group 1 (<i>n</i> = 12)			Adapt Group 2 (n = 13)		
Vocabulary Item	м	SE	SD	м	SE	SD
synopsis	.08	.08	.29	.08	.08	.28
(to) apportion	.25	.13	.45	.54	.14	.52
hereinafter	.08	.08	.29	.62	.14	.51
vicinity	.42	.15	.51	.69	.13	.48
(to) intercept	.33	.14	.49	.46	.14	.52
(to) steady	.08	.08	.29	.62	.14	.51
steering stand	.17	.11	.39	.31	.13	.48
occurrence	.00	.00	.00	.38	.14	.51
congested	.00	.00	.00	.15	.10	.38
ferromanganese	.42	.15	.51	.69	.13	.48
amendment	.25	.13	.45	.62	.14	.51
adhesion	.17	.11	.39	.38	.14	.51
abrasion	.08	.08	.29	.46	.14	.52
recessed	.17	.11	.39	.31	.13	.48
bulwark	.00	.00	.00	.54	.14	.52
guard frame	.00	.00	.00	.46	.14	.52
apparatus	.08	.08	.29	.31	.13	.48
lateral	.00	.00	.00	.08	.08	.28
foremast	.00	.00	.00	.23	.12	.44
excerpt	.08	.08	.29	.00	.00	.00

Table 3. Total means of correct responses for 20 vocabulary items across the two groups (*N* = 25)

Adapt Group 2 managed to outperform Auth Group 1 on 18 vocabulary items (values in bold), with Auth Group 1 performing better on only one item (*excerpt*, M = .08) (both groups achieved equal scores for *synopsis*, M = .08). As our sample size warranted the use of the statistical Mann-Whitney U test (Noether, 1987), the test

was used to calculate whether there was statistical significance in the data, and to test the previously stated hypothesis (H₁): *Learners are more likely to retain new lexis when it is presented in adapted texts as opposed to authentic texts.* A Mann-Whitney U test revealed that correct response scores on the Post-test were significantly lower in Auth Group 1 (Md = 1.00, n = 12) than in Adapt Group 2 (Md = 5.50, n = 13), U = 59, z = 3.8, p = .001, with a large effect size r = .76. The null hypothesis (H₀: *Learners are equally likely to retain new lexis when it is presented in adapted texts*) could therefore be rejected in favour of H₁, meaning that participants who received the adapted text showed better retention of target vocabulary in the post-test stage.

5. DISCUSSION

The aim of this study was to answer the question of whether learners are more likely to retain new lexis when it is presented in adapted texts than when it is presented in authentic texts. Our results seem to indicate that, contrary to the widespread opinion among learners (Borucinsky & Jelčić Čolakovac, 2020; Potočnik Topler, 2014), the use of authentic teaching materials in vocabulary instruction does not lead to better comprehension or retention of the selected vocabulary. Although student motivation is highly correlated with the use of authentic materials in class, regardless of their levels of language proficiency (see Borucinsky & Jelčić Čolakovac, 2020; Kelly et al., 2002; Potočnik Topler, 2014; Torregrosa Benavent & Sánchez-Reyes Peñamaría, 2011), this does not necessarily represent the best teaching approach in specialized vocabulary instruction. As mentioned in the introductory section, the readability of adapted texts is generally better due to the simpler vocabulary and repetitive structures (Borucinsky & Jelčić Čolakovac, 2020). On the other hand, student motivation is high when the materials are authentic, probably because such materials are more relevant and engaging compared to ESP coursebooks, which even teachers often find outdated (Spirovska Tevdovska, 2018). Nevertheless, our study shows that adapted materials are sometimes better for the instruction of specialized vocabulary, even if students' motivation for such materials is not as high. Specialized lexis represents a challenge for ESP learners because this vocabulary is only represented in ESP materials that learners usually encounter in the classroom, but not in everyday situations. It is therefore to be expected that the familiarity of ESP vocabulary is lower than that of general vocabulary that learners are regularly exposed to via the internet and other media. The results of the Pre-test conducted for the purposes of this study seem to support this claim. Many of the vocabulary items that learners seem to be already familiar with can also be considered general English vocabulary (e.g. lighthouse is strictly speaking a word that belongs to the specialized Maritime English lexis, but rarely will we encounter an L2 learner of general English who is unfamiliar with its meaning - 'a tall building near the coast or shore with a flashing light at the top'). Of course, the frequency of

word occurrence also affects its familiarity (lighthouse undoubtedly occurs more frequently in a corpus search than, for example, other Maritime English items we included in the study, such as *foremast* 'a tall pole that supports a sail and is nearest the front of a ship' or *bulwark* 'side of the ship above the main deck'). The Post-test results also seem to indicate that word frequency and its presence in the general English vocabulary influenced the overall data; vicinity 'the area around a place or where the speaker is' scored the highest combined mean (.56) as well as per group (.42 and .69 for the Auth and Adapt groups respectively). Learners' approaches to general vocabulary as opposed to specialized vocabulary might also differ in terms of learning strategies and task specificity. In most cases, specialized lexis does not lend itself as well to the reading strategies typically used by ESP learners as the general vocabulary does (Coady, 1997). The data we obtained for the items synopsis 'a short description of the contents of something' and *excerpt* 'a short part taken from a speech, book, film, etc.' are particularly interesting in this respect, since relying on context as one of the reading strategies commonly used by L2 learners (Akbari & Tahririan, 2009; Coady, 1997) does not appear to have been used successfully by the participants in our study. Apart from the obvious similarity of their meanings, excerpt and synopsis are also general vocabulary units that frequently occur in specialized Maritime English texts such as short communiques and reports. In sum, text adaptation does not seem to have been sufficient to facilitate retention of these two items in the case of the Adapt group (.08 for synopsis and .00 for *excerpt* as opposed to .08 for *synopsis* and .08 for *excerpt* in the Auth 90group), which is probably due to their low occurrence in the overall language materials, both authentic and adapted.

The type of the language skill tested in the study probably also played a role in the groups' performances. Since the task at hand required participants to read a specialized maritime report, it could be seen that the level of difficulty of the vocabulary used in the authentic text was significantly higher than, for example, the vocabulary used in an authentic listening activity. In other words, research has shown that L2 students' listening vocabulary is normally smaller than their reading vocabulary (Renandya & Jacobs, 2016). That is, a statistically significant difference in success rates between the two groups might not have occurred if the study design had included a task that focused on a different language skill, such as listening. Ghanbari et al. (2015) found that students taught with authentic materials had higher accuracy rates on the vocabulary retention task than students taught with an ESP coursebook. In their study, a professional paper was used as an example of authentic reading material and the lessons took place several times a week for one month. Such a study design could not possibly have controlled for all potential extraneous variables (e.g. the equality of teacher input in each of the lessons, the type of vocabulary presentation in relation to each student's preferred learning styles, etc.).

In addition to the specificity of the language skill in question, another variable to consider is the visual representation of the target vocabulary in authentic texts,

which does not always have to be in-text, as is the case with adapted teaching materials. This is to say, in adapted texts, the target vocabulary is expected to be predominantly in the featured text or in the text heading. However, this is not the case with authentic reading materials as their primary purpose is not educational (Marjanovikj-Apostolovski, 2019), i.e. they are not intended to teach but rather to convey a message effectively (e.g. a maritime report aims to describe in detail the circumstances of a particular incident at sea, suggesting that a considerable amount of specialized lexis will be found in image captions or, for example, schematic representations; an article published online, such as the one used in the Ghanbari et al.'s [2015] study is likely to contain lexis presented in figures or in tabular form; etc.). For this reason, we left the visual representation of the lexical item adhesion in the adapted text unchanged to reflect its appearance in the authentic version and to exclude the text representation as a potential extraneous variable. The overall means for the two groups seem to indicate that participants' reading comprehension was not affected by the text representation. Adhesion (combined mean of .28) scored equally on the Post-test as abrasion (.28) or bulwark (.28), both of which were presented in-text, as opposed to *adhesion* which was part of an image caption.

Another aspect specific to the present study, the aim of which was also to minimize the effect of uncontrolled variables on the data, lies in the nature and extent of the modifications made to the authentic materials used in the lesson. This is to say, we used the same source text for the adapted and authentic versions of the reading materials, with minor interventions in the Adapt text. Other studies have used different texts on the same specialized subject containing the same target vocabulary (see Ghanbari et al., 2015). We believe that our approach eliminates all extraneous variables that stem from the use of different texts and thus influence the results of the study (e.g. text and/or sentence length, text presentation, the familiarity of non-target lexis used in the text, etc.).

6. CONCLUDING REMARKS

Although the use of authentic materials in ESP contexts has been the subject of numerous studies, little attention has been paid to the precise methodology behind any material design. The process of adapting authentic sources for classroom use is particularly elusive, as there are no concrete instructions on how the material adaptation could be carried out. This paper provides a clear methodological overview of how authentic material was adapted to have a significant effect on the retention of specific vocabulary. Our findings suggest that even minor alterations to the original text have a positive effect on learners' retention of new vocabulary, probably because the main advantages of authentic materials, i.e. their positive effect on learners' motivation and task engagement, remain unaffected by the alterations (Borucinsky & Jelčić Čolakovac, 2020; Potočnik Topler, 2014). This means that the use of authentic materials in the ESP classroom does not always lead

to higher rates of accuracy in testing specific vocabulary and that in all future studies of the same scope the nature and degree of adaptation of particular materials need to be emphasized. In addition, our study has shed light on the importance of word frequency and the status of a particular vocabulary item in general English when it came to the word's accuracy achieved in the Post-test. The specificity of ESP vocabulary was also revised, as the nature of this vocabulary does not benefit equally from reading strategies such as relying on context, unlike general English lexis where learners are more likely to be successful when they infer meaning from sentential context. There are two possible reasons why ESP students are not more successful when they rely on sentential context, namely their proficiency level and their knowledge of the discipline they are studying. The ESP vocabulary in authentic materials is often embedded in the accompanying disciplinary content, and students' ability to rely on context is strongly influenced not only by their language proficiency but also by their disciplinary knowledge (Akbari & Tahririan, 2009).

One of the drawbacks of this study lies in the fact that the Post-test relies heavily on learners' ability to recall a vocabulary item from memory, which means that other learner-specific skills are also put to the test and we can by no means be sure what we are testing. Another limitation concerns learners' proficiency levels. Although study participants were expected to be at a B2 level according to the CEFR classification, their proficiency in English was not additionally tested. The effect of the Matura exam level on the overall success rate in the Post-test could therefore not be calculated due to the small sample size. Nevertheless, we believe that our 92 study gives a good indication of the effect of material adaptation on vocabulary retention among ESP learners, as other factors that might have affected the results were taken into account in the experiment design. Although many ESP teachers make regular material adjustments, based on personal experience, we believe that this process is often quite intuitive and there are generally no set guidelines or instructions. The categorization of adaptation strategies presented in this paper aims to bridge the existing gap between theory and practice in the design of ESP materials in the hope of shedding light on the process and helping ESP teachers to better tailor their materials to the needs of different language learners' profiles.

Future research efforts might be directed towards the effect of word class (e.g. are nouns [e.g. excerpt] retained more easily than verbs [e.g. (to) apportion)] or even item length (e.g. are MWEs [multi-word expressions] [e.g. guard frame] more difficult to retain than single-word items [e.g. adhesion]) on the overall comprehension of vocabulary in authentic or adapted texts. The role of disciplinary knowledge in vocabulary recall may also be a topic of interest in future studies, as the results of such a study could have direct implications for ESP classroom practice in general.

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