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Lexical inferencing in reading an English text: an introspective study*

Inferencja leksykalna w czasie czytania tekstu angielskiego: badanie introspekcyjne

Abstract
The aim of the paper is to present the results of a think-aloud study which investigated how Polish learners of EFL coped with unknown words in a written text. The following aspects of the inferencing process were explored: the strategies and types of knowledge sources used by the learners, the students' individual patterns of strategy use, effectiveness in deducing word meanings and the reasons behind unsuccessful inferences. The results showed that the learners applied a range of cognitive and metacognitive strategies, with translation and paraphrasing as the most frequent ones, drawing on interlingual, intralingual and external sources of information. The students differed in their way of deducing the meanings of unknown words and the effectiveness of inferencing. The failures in deriving word meanings were attributed to poor skills of referring to global context and inability to follow semantic relations throughout the text.

Keywords: lexical inferencing, reading in a foreign language, guessing unknown words from context, reading strategies, introspective study

Abstrakt
Artykuł przedstawia wyniki badania introspekcyjnego, którego celem było zaobserwowanie, jak polscy uczniowie radzą sobie z nieznanymi słowami, czytając tekst w języku angielskim. Zbadano następujące aspekty procesu odgadywania znaczeń nowych słów: strategie odgadywania i ich sposób zastosowania przez poszczególnych uczniów, rodzaj wykorzystanych informacji, skuteczność odgadywania oraz przyczyny niepowodzeń. Uzyskane wyniki wskazały na bogatą gamę strategii kognitywnych i metakognitywnych zastosowanych przez uczniów, wśród których strategie polegające na tłumaczeniu i parafrazowaniu fragmentów tekstu były używane najczęściej. W czasie czytania uczestnicy korzystali z różnych źródeł, m.in. tekstu, wyrazów, których znaczenie mieli odgadnąć,

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własnych doświadczeń językowych i języka rodzimego. Czytający różnili się między sobą sposobem zastosowania strategii w czasie odgadywania znaczeń nieznanych słów oraz skutecznością odgadywania. Niepowodzenia uczniów przypisano nieumiejętności odnoszenia się do kontekstu globalnego oraz nieporadności w śledzeniu relacji semantycznych w tekście.

Słowa kluczowe: inferencja leksykalna, czytanie w języku obcym, odgadywanie znaczenia słów z kontekstu, strategie czytania, badanie introspekcyjne

1. Lexical inferencing as a comprehension strategy in L2 reading

Lexical inferencing, i.e., guessing unknown words in the text, has attracted a lot of attention in L2 research. Introspective studies, e.g., Mori (2002); Paribakht and Wesche (1999); Qian (2004), indicate that guessing from context is often the most frequent and preferred strategy when L2 learners encounter unknown words in the written text.

Lexical inferencing is a complex process. It "involves making informed guesses as to the meaning of a word in light of all available linguistic cues in combination with the learner's general knowledge of the world, her awareness of the co-text and her relevant linguistic knowledge" (Haastrup 1991: 40).

2. Types of knowledge useful in inferencing

2.1. Linguistic knowledge

An appropriate level of language competence is an important prerequisite for successful reading, including effective lexical inferencing. **Vocabulary knowledge** is an unquestionable source of support for L2 learners. With rich vocabulary knowledge, the reader is more likely to know the meanings of the words that appear around a particular unknown word in the text.

Knowledge of grammar enables learners to identify the part of speech of an unknown word and allows the "Who does what to whom?" analysis, as suggested by Clarke and Nation (1980: 212). Liu and Nation (1985) claim that successful guessing may be affected by the part of speech of the target word; they found the following difficulty order: adjectives, adverbs, nouns, and verbs with adjectives being the most difficult. Another useful ability involves recognising the **syntactic behaviour** of a given word, i.e., sentence-level grammatical knowledge. De Bot et al. (1997) found that sentence-level grammatical knowledge was the most popular knowledge

source used by the subjects in their study. **Word schemas**, i.e. knowledge that readers have about possible meanings of words they encounter in text, can provide the reader with considerable assistance (Nagy and Scott 1990). Knowledge about constraints on possible word meanings directs the learner during the reading process and narrows down a range of possible meanings of unknown words.

Readers' L1 can be a valuable source of knowledge. Encountering words in an L2 text that resemble the learner's L1 in spelling, morphology, and syntax (loan words and cognates) can make understanding new words easier (Allen 2022).

2.2. World knowledge

The role of background knowledge in deducing new words' meanings has been confirmed by many scholars. For example, Nassaji (2003) found that world knowledge, i.e., knowledge of the content or the topic that goes beyond what is in the text, was the source of knowledge most frequently used by intermediate L2 learners. McKeown (1985) proposed a model in which she accounted for the role of background knowledge in the inferencing process. She assumed that the reader goes through a series of stages. First, the reader recognises a word as new; then he/she selects appropriate information from the context to restrict the meaning of this word; and finally, the learner seeks a suitable concept in his/her background knowledge to match a given context. McKeown (1985) concludes that learners should become aware of the interaction between their background knowledge and constraints imposed by the text.

2.3. Strategic knowledge

N. Ellis (1997: 135) notes that "…inferring the meaning of new words is neither an autonomic nor implicit process. It involves conscious applications of strategies for searching for information, hypothesis formation and testing." Developing learners' conscious control over their cognitive resources has been a goal of strategy instruction for the last decades. Nagy (1997) observes that while it usually takes many years to increase L2 learners' linguistic competence and world knowledge, strategy training can be more promising as it may not require a lot of instructional time. Research (e.g., Walters 2004) shows that training learners may bring positive results and can improve their guessing strategies.

A number of instructional models have been promoted in the literature. Nation (1990) suggests L2 learners apply a series of strategies in discovering the meanings of new words: 1) deciding on the part of the speech; 2) examining the clause which contains the unknown word; 3) examining the relationship between the unknown word and other sentences or paragraphs; 4) guessing the meaning of the unknown word; 5) checking the effectiveness of the guess by e.g., replacing the unknown word with the guess; 6) breaking the unknown word into its root, prefix and suffix, and checking if the word's elements correspond to the guess.

An organised system of guessing has been explored by van Parreren and Schouten van Parreren (1981), with grammar viewed as one of the lowest levels and then meaning and word analysis as higher levels in the assumed hierarchy of guessing steps. In their study good guessers did not necessarily go up through all the levels; instead, they began their guessing on the level that they found appropriate.

3. The role of context in inferencing

Context is a crucial factor in both L1 and L2 reading (Nagy 1997). However, as research (e.g., Cziko 1978) shows, when compared to L1 readers, L2 learners are less effective in the use of context.

Various types of contexts have been identified. Chodkiewicz (2000: 82) distinguishes two types of contexts: local and global. **Local context** involves morphology of a word, semantic/syntactic relations of a word or a phrase and a word as a part of a sentence; whereas **global context** – semantic effects holding across sentences and paragraphs through the whole text, and a mental model created by the reader on the basis of the information drawn from the text.

Research on L2 learners' guessing process, e.g., de Bot et al. 1997; Haastrup 1991; Nassaji 2003, has underscored the importance of discourse clues. Sasao (2013) has analysed the discourse clues identified in selected studies and compiled the following list of clues: direct description, indirect description, contrast/comparison, synonym, appositive, modification, restatement, cause/effect, words in series, reference, association, example.

It seems important to note that there are voices that cast doubt on the effectiveness of contextual clues. It is suggested that much depends on the strength of effort to guess invested by the reader (de Bot, Paribakht and Wesche 1997; Nassaji 2003). Stronger engagement can mean using a richer range of information sources and consequently deeper processing of the text and more successful guesses.

To sum up, ample research into the inferencing process points to a multi-faceted nature of this aspect of reading comprehension and vocabulary knowledge, leaving much space for further studies. The introspective study presented in the further part of the paper aims to contribute to the existing research.

4. The study

The study was a small-scale case study. The aim was exploratory and descriptive: to gain insight into the process of deriving word meanings of Polish EFL learners engaged in an inference reading task. Although lexical inferencing has attracted attention in a Polish research context (e.g., Seretny 2019), there are not many introspective studies that would focus on this component of reading. The present study aims to fill this gap.

It is important to explain that the think aloud data analysed by the author of the present paper were taken from a more extensive corpus collected by Wawrzyńska (2016). This means that Wawrzyńska is the person who conducted the think aloud session, recorded the learners and transcribed the recorded material.

4.1. Theoretical foundation

In the present study, reading and vocabulary acquisition are viewed from a cognitive perspective, which enables the researcher to explore learners' mental processes involved in comprehending texts. From this perspective, the study aims to account for learners' underlying processes when they read an English text and encounter new words, and for the type of knowledge and information that learners apply when trying to guess the meaning of unknown words.

4.2. Subjects and methodology

Five secondary school students participated in the study. They were 18 years old. The learners' EFL competence was evaluated as B1 (i.e., intermediate according to CEFR scales). It was decided that think-aloud protocols would be the most suitable research method for exploring EFL learners' inferencing processes. In the present study, thinking aloud meant reading an English text in silence and talking about the ways of coping with the vocabulary items underlined in the text. It was expected that

think-aloud methodology would engage the subjects in both introspection and retrospection over the deliberate actions they took to derive the meanings of unknown words.

4.3. Text

The text (see Appendix) was taken from Roskams' (1998) introspective study. It was decided that an argumentative text would be suitable for the learners as it is the most popular genre to which the students had been exposed when using coursebooks. As regards the topic of the text, it was assumed that the theme would be new for the students, which would limit the influence of background knowledge on their inferencing. The text is 181 word long with six words underlined. It was expected that the learners would not be familiar with the words underlined and the text would provide sufficient linguistic data to enable the students to guess the words and comprehend the text. The first underlined word appears in the fifth sentence, which would give the readers enough time to become familiar with the text.

4.4. Research questions

The following research questions were formulated:

1) What strategies did the students use when dealing with the unknown words?
2) What types of knowledge and information did the students draw on?
3) How successful were the students in guessing the meanings of the unknown words?
4) What was the reason the learners did not manage to discover the meanings of the words?
5) What individual patterns of strategy use did the learners follow while guessing the meanings of the unknown words?

4.5. Procedure

Each of the students was given a handout which included the task instruction and the text with six words underlined in it (see Appendix). The students' task was to read the text in silence, stop at each underlined word, say if they knew the word, and in the case of finding the word unknown guess the meaning of the word. The learners were asked to report on the process of guessing in their L1, i.e., Polish. When the participants

stayed silent for particularly long, they were encouraged to verbalize their thoughts concerning the process of their guessing. The session was recorded. The students had been informed that the recorded material would be used only for research purposes and their personal data would not be revealed. All the participants accepted those rules. Before the think-aloud session, the learners had been given a short training which demonstrated what a think-aloud task involves.

4.6. Analysis of the verbal protocol data

As mentioned earlier, the recorded data were transcribed by Wawrzyńska (2016). Pauses that the subjects made while thinking aloud marked as dots were included in the protocol as well; the number of dots reflects the length of the pause. Since it was believed that the learners' attitudes to the text and the think-aloud task could be an important part of their strategic behaviour, words interpreted as the signs of indecision, interest or surprise were also indicated. The data prepared in this way were translated verbatim from Polish into English by the author of the present paper.

The transcribed data were analysed with reference to each learner and each underlined word. A protocol is a transcript of data produced by a particular reader concerning a given target word; 30 protocols (5 readers each guessing 6 words in the text) were identified in the data and analysed. The analysis involved the following stages: 1) identifying strategies taken by each learner; 2) identifying the sources of information that each learner drew on while inferring the meaning of each word; 3) measuring the correctness of guessing; 4) identifying the reasons of failures; 5) identifying students' individual patterns of strategy use. All the stages of the analysis were performed by the author of the paper.

In the present study, a strategy was defined as an action taken by the reader to complete the think-aloud inference task. At the first stage of the analysis, a range of strategies was identified and grouped into different types according to the functions they played in the process of guessing. At the next stage each protocol was inspected to identify the sources of knowledge and information that each student used as the material exploited in the process of guessing. The success of inferencing was evaluated in a quantitative way and involved measuring the correctness of each guess. The guess was given 0, 1 or 2 points depending on how correct it was. Successful guesses, semantically and syntactically, were given 2 points. Partially successful guesses, e.g., correct meaning of the target word which does not fit

the context, were awarded 1 point; whereas incorrect guesses received 0. In the case of skipping the word, the guess was evaluated as 0; in the case of knowing the target word, the guess was marked as X and was excluded from the calculations. The next step in the analysis involved reading each protocol to identify factors that could be considered to be the main reasons why the student failed to guess the meaning of the target word. Finally, it was possible to identify patterns of strategy use that individual students demonstrated while guessing the meaning of each word.

4.7. Results

4.7.1. Strategies the students used when dealing with the unknown words

The analysis of protocols allowed to identify a range of strategies, which were grouped into cognitive and metacognitive strategies (defined after O'Malley and Chamot 1990). The learners applied **cognitive strategies**, i.e., they manipulated interlingual, intralingual and extralingual information to infer the meanings of the target words. **Metacognitive strategies** were used to plan actions as well as to monitor and evaluate the cognitive strategies applied earlier. Table 1 presents a taxonomy of strategy types applied by the participants as well as a number of occurrences of particular strategies as used by the learners in the think-aloud task.

The table shows that the learners applied 17 types of cognitive strategies 104 times and used 7 types of metacognitive strategies 31 times. The most popular types of cognitive strategies were noticing the target word in the text and focussing on this word (FOC), which the students applied by default since the target words were underlined in the text so that the learners could see it. After excluding this strategy from the analysis, 74 occurrences of cognitive strategies and 31 occurrences of metacognitive strategies are left. In the group of cognitive strategies, the most frequent strategies were translating the target word into L1, translating the clause which contains the target word into L1 (TRANS+) and paraphrasing the sentence(s) that appear(s) in the proximity of the clause which contains the target word (PARPROX). In the group of metacognitive strategies, the following were the most common: commenting on one's actions taken to guess the meaning of the word (META) and evaluating one's guess as partly successful (EVAL?).

The data demonstrate that the strategies applied by the study participants served various functions in the process of guessing; they were used to search

Table 1. A taxonomy of strategies with a number of occurrences of particular strategies as used by the learners in the think-aloud task

Strategy	Number of occurrences
COGNITIVE strategies	Total: **104**
FOC – noticing the target word in the text, focussing on this word	30
TRANS+ – translating the target word into L1; translating the clause which contains the target word into L1	16
EXP – defining the target word in L1	9
PARPROX – paraphrasing the sentence(s) that appear(s) in the proximity of the clause which contains the target word	8
ASSPOL – associating the target word with word(s) from L1	6
TRANS- – translating the whole clause which contains the target word into L1 but leaving out the target word in its original form, i.e., English	5
LOOKPOL – searching for a Polish word which would be a substitute for (an equivalent of) the target word	5
PAR – paraphrasing the clause which contains the target word	5
ASSPLE – associating the target word with one's own previous learning experience	4
READ – reading the clause which contains the target word	4
ANAL – analysing the word	4
READPROX – reading the sentence that appears in the proximity of the clause which contains the target word	2
PROP – on the basis of the target word developing a proposition (an idea) which is not really expressed in the text; elaborating	2
TRANSPROX – translating the sentence(s) that appear(s) in the proximity of the clause which contains the target word	1
FOCPROX – focussing on the word(s) that appear(s) in the proximity of the target word	1
BACKKNOW – drawing on one's prior knowledge related to the content of the text	1
COM – commenting on one's reaction to the word or text, e.g., expressing surprise	1
Metacognitive strategies	Total: **31**
META – commenting on one's actions taken to guess the meaning of the word	9
EVAL? – evaluating one's guess as partly successful	9
THINK – stopping verbalising to think and reflect or buy time	4
EVAL+ – evaluating one's guessing as successful	3
NOUND – expressing lack of understanding	3
SELFCOR – correcting oneself, i.e., one's previous guess	2
CONF – confirming having guessed the meaning of the target word	1
Other strategies	**4**
SKIP – skipping the word	3
KNOW – saying that one is familiar with the target word	1

for information necessary to discover the meaning of the word, to formulate the hypothesis about the meaning of an unfamiliar word, and to evaluate the hypothesis made at the earlier stage. There are some strategies that were applied for various purposes at different stages in the inferencing process, e.g., translation (TRANS+) was used to gather information as well as to check the effectiveness of one's guessing.

It is crucial to note that a noticeable number of cognitive strategies was connected with the learners' use of Polish, which was the language they used when thinking aloud. In search of the meaning of the target words, the students translated the sentences which contained target words. A common strategy was translating the whole clause which contains the unknown word into Polish but omitting the target word or replacing it with, e.g., the word "word" (see example 1). A similar strategy involved searching for a Polish word which would be a substitute for (an equivalent of) the target word (see example 2).

Example 1.

> Student B: *Here I see the word* ***infants*** *… and from the context I know that … uhm … all no.. this word died before the first year*

Example 2.

> Student A: *well, here I see the word* ***insensitive*** *… I know the word* ***sensitive****, it means … well … I don't know this word in Polish because … but I know what it means in English and I understand the sense of the English word but I simply can't translate it into Polish …. I mean …. the Polish word just slipped my memory*

4.7.2. Types of knowledge and information the students drew on

The following types of information were identified:

Extralingual: 1) students' knowledge about the ideas presented in the text, i.e., background knowledge; 2) students' knowledge about the target word derived from their prior learning experience

Intralingual: 1) word level clues about the morphology of the target word; 2) sentence level clues found in the clause in which the target word appears; 3) discourse level clues found in the sentences that appear around the target word

Interlingual: 1) Referring to L1 (i.e., Polish) – cognates

4.7.3. Effectiveness of guessing the meanings of unknown words

Table 2 presents the score of each student as well as the mean scores calculated for each target word.

Table 2. The learners' scores for each target word

Subjects and target words	infants	deprivation	drastic	insensitive	mop up	acquiring	total score out of 12
Subject A	2	1	2	2	2	1	10
Subject B	2	0	2	2	0	0	6
Subject C	2	2	2	0	2	X	8
Subject D	1	0	2	0	2	0	5
Subject E	2	0	0	2	2	1	7
Total: in points and mean scores	9 1.8	3 0.6	8 1.6	6 1.2	8 1.6	2 0.5	36 7.3

The calculations show that the most difficult word was *deprivation* (the mean score 0.6), the easiest word – *infants* (the mean score 1.8). The best guesser was subject A (who scored 10 points); the weakest – subject D (who scored 5 points). The range of the scores obtained by the students was 5.

4.7.4. The reasons behind the failures to guess

The data gathered in the analyses lent themselves to investigating the question: why some of the attempts to unravel the meanings of target words ended in failures. There were words in the text that turned out to be extremely difficult for the learners (see Table 2). The word *deprivation* was successfully inferred only by one learner; the word *acquiring* – by two students, whose guessing was evaluated as 'partially successful'. A detailed analysis of the text and its features (not presented in this paper) suggests that guessing the meaning of each of the words would require the use of discourse knowledge. In inferring the meaning of *deprivation*, it would be helpful to recognise the following contextual clues (see Appendix): 1) the word *here*, which refers to the experiment conducted by Frederick II; 2) the previous sentences, which describe the experiment; 3) in the previous sentences the words that define the target word, i.e. *deprivation*, i.e. *starved, damaged, heard no mother tongue*. Unfortunately, most of the learners ignored these discourse clues, which resulted in inability to follow the development of arguments in the text.

Other factors that contributed to the students' ineffective inferencing were: incorrect identification of part of speech, inability to analyse the morphology of the word, unsuccessful evaluation of the guess, elaborating, i.e., constructing a proposition that does not match the text (see example 3) and not enough effort invested in the attempt to guess.

Example 3.

> Student D: *Here I see **time for acquiring** and here I'm reading that it's ideal time for … for … that **acquiring skills**, which means practising skills and here from the text I know that they are practising their skills so that they will not make the same mistakes.*

Student D focused only on the clause in which the target word appears. He did not go beyond this local context. To check the effectiveness of his guess, he elaborated and constructed a proposition that does not match the text.

There were also protocols evaluated as "on a good track inferencing" (see examples 4 and 5).

Example 4.

> Student A: *Well, and here I see the word **deprivation** … I don't know what it means, but there was the information that he forbade these nurses to speak any language … so this sentence in my opinion means, means this word in this sentence that there was no more sort of … language distortions? Something like that?*

Student A experienced difficulty guessing the meaning of *deprivation*. He drew on his understanding of the previous sentences and focussed on the information that he found useful, i.e., the experiment of Frederick II. His guess – "language distortions" – was not 100% correct but it carried negative connotation (just like the target word) and fit the context.

Example 5.

> Student D: *Uhm … I'm not really sure what this word means … Here I read **infants died before the 1.year** so I can guess that they are, they are … one minute … that they were the first sort of … because here I read **judging from the drastic experiment of Frederick II in the thirteenth century it may be** so I understand that he carried out some experiments and here that all of and here that **infants** so I would say that … I don't know how to say it in Polish … that samples, no – the subjects of the study.*

The learner focussed on both sentence-level and discourse-level clues, which helped him to analyse the meaning of *infants* in a more global context. Unfortunately, he did not notice the word *child* in the previous sentences as a synonym of *infant*.

4.7.5. The learners' individual patterns of strategy use

It was possible to identify the patterns of strategy use that individual learners demonstrated while performing the guessing task. To obtain a more complete picture of how each student coped with the target words, all the information concerning each learner was collected. Table 3 presents the following data concerning selected students: the patterns of strategies applied, the sources of knowledge exploited, the scores which reflect the effectiveness of inferring the target words and the reasons behind the failures.

Table 3. Students' individual patterns of strategy use when coping with target words

Subject and target word	Strategies applied	Score	Source(s) of knowledge used	Reasons for the failure
1	2	3	4	5
B *infants*	FOC/THINK/TRANS/ BACKKNOW/PARPROX/ TRANS+	2	background knowledge (BKNOW)	–
C *infants*	FOC/LOOKPOL/TRANS/ THINK/LOOKPOL/ TRANS-/TRANS+/ASSPLE	2	previous learning experience (PLE)	–
D *infants*	FOC/EVAL?/READ/META/ BUY/TRANSPROX/EVAL?/ READ/PARPROX/EVAL?/ EXP	1	discourse level clues; sentence level clues	"on a good track" inferencing
A *deprivatio*n	FOC/EVAL?/PARPROX/ THINK/TRANS+/ EVAL?	1	discourse level clues	"on a good track" inferencing
E *deprivation*	FOC/READ/SKIP//FOC/ META/READPROX/ FOCPROX /LOOKPOL	0	–	not enough effort invested
A *drastic*	FOC /ASS POL/EVAL?	2	L1 (cognate)	–
E *drastic*	FOC/ASSPOL/TRANS+/ PARPROX	0	L1 (cognate); discourse level clues	unsuccessful evaluation of the guess; inability to use discourse clues to check the meaning of the guess
A *insensitive*	FOC/ANAL/THINK/ LOOKPOL/ANAL/ LOOKPOL/META/TRANS+/ SELFCOR/EXP/CONF	2	morphology	–

cont. Table 3

1	2	3	4	5
C insensitive	FOC/ASSPOL/EVAL-/ANAL/ ASSPLE/NOUND/ EXP/EVAL-	0	PLE	inability to analyse the morphology of the word
A *mop up*	FOC / TRANS+/ PAR	2	sentence level clues; word collocation	–
B *mop up*	FOC/TRANS+/PAR	0	sentence level clues; word collocation	ignoring discourse level clues to find relationships between the sentences
D *acquiring*	FOC/META/EXP/PROP	0	sentence level clues	elaborating, i.e., constructing a proposition that does not match the text
E *acquiring*	FOC/META/READPROX/ PARPROX	1	sentence level clues	ignoring discourse level clues; inability to follow the development of the arguments

The data show that there were only 3 cases of skipping the word; in one case the student returned to the target word and reembarked on the attempt to discover the meaning of the word (see Student E *deprivation*; this action is marked as // in the protocol). The learners applied combinations of strategies; some of them were quite extensive, e.g., Student A in *insensitive*, Student D in *infants*. As regards sources of knowledge, in many cases when working on the same target word the learners exploited the same types of knowledge. The most frequent knowledge sources are the following: *infants* – a combination of discourse and sentence level clues, and previous learning experience (PLE); *deprivation* – discourse and sentence level clues; *drastic* – L1 (cognate); *insensitive* – morphology; *mop up* – sentence level clues; *acquiring* – sentence level clues.

There were students who drew on their previous learning experience (PLE) while deducing the meanings of the words (see examples 6, 7 and 8). The protocols were translated into English; the words in bold are the words that the learners produced in English.

Example 6.

> Student C: ***Infants****? I know* ***infants*** *because I can recall some toys, a long time ago, small toys in cans to pour water into and they were* ***infants****.*

Example 7.

> Student D: *and here I see **language rapidly** and I think it may mean "language faster" …. **Mop up** means to learn, and I associate **rapidly** with the Internet and rapidshare, which is sharing data quickly, well at least in my translation*

Example 8.

> Student A: *and here I see the word **infants** … and …oh… I've watched a film on BBC, and it was about small babies so I know what **infants** means.*

All the students used the knowledge of the vocabulary they had encountered earlier in informal, out-of-school situations. Student C associated the word *infants* with the toys, probably their brand. Student D fell back on his knowledge of the vocabulary he had learnt from the Internet. Student A associated the word *infants* with the BBC film she had watched before.

The analysis of the learners' individual patterns of inferencing seems to indicate that the learners did not follow any organised system of guessing (cf. van Parreren and Schouten van Parreren 1981). However, there were strategies which the students favoured: translating and paraphrasing the sentences that contain target words as well as reading such sentences aloud. It was observed that the strategies were applied for two different purposes – to collect necessary information and to evaluate the hypotheses made at the earlier stage.

5. Discussion

The think-aloud data provided rich material, which enabled the author of the paper to answer her research questions. As regards the strategies the students used, the results indicate that the learners applied a range of cognitive and metacognitive strategies. The strategies were used as combinations; they formed logical sequences that facilitated the learners' search for word meanings. The most common strategies were translating and paraphrasing sentences; they were used to collect necessary information by examining the relationships among different parts of the text and to check the guess for accuracy against a wider context. The facilitative role of translation in reading EFL was observed also in other studies, i.e., Kusiak (2013). They seem to imply that translation plays a crucial function in both reading comprehension and vocabulary problems, underlying thus the role of L1 in developing FL competence.

In their attempts to derive the meanings of unfamiliar words, the students drew on a variety of knowledge sources, such as sentence level and discourse

clues, L1 (cognates), morphology of a word, previous learning experience and background knowledge. By resorting to their previous learning experience, the students recognised in the text the words that they remembered from their earlier exposure to English. This finding provides clear evidence that incidental vocabulary acquisition can be successful, at least in the receptive dimension of vocabulary knowledge.

The analysis of the students' ways of copying with the unknown words points to both similarities and differences between the students. As for similarities, there were knowledge sources that most of the learners prioritised when guessing the meanings of the same target words. For example, in the search of the meaning of *drastic*, referring to Polish was the most common strategy. The students differed in the scores they obtained for their guessing; the range of scores obtained was from 5 to 10 points. They also differed in the way they performed the task of guessing the target words, e.g., in the amount of effort invested in guessing (which was demonstrated by the number of strategies) and types of strategies applied. This finding implies that the learners were individuals with different states of knowledge and learning experiences, the factors that undoubtedly influenced the learners' choices in the process of guessing.

The data provided information concerning the difficulty of the guessing task. There were words in the text that turned out to be extremely difficult for the learners. The factors that most frequently contributed to less successful inferencing were the students' inability to use clues from global context, i.e., discourse level clues found in the sentences that appear around the target word. Knowledge obtained in this way could have helped the learners to follow the development of arguments and construct their mental models of the text.

The findings offer some implications concerning future research. In the present study, the subjects were not instructed in a direct way to focus on understanding the text before they became involved in an inferencing task. This could have influenced the way they approached the text, constructed their understanding and coped with the underlined words. In the future it could be interesting to explore in more depth the subtle relation between word comprehension and text comprehension as well as lexical inferencing and text inferencing (cf. Haastrup 2008).

In the present project, the learners found themselves in an artificial reading situation, which guided students to specific words, imposing thereby particular cognitive processes. It could be useful to investigate learners' approach to the same text in a more natural situation, i.e., the one that would resemble normal reading and incidental vocabulary acquisition.

The present study points to a complex interplay among the text, the target words, the learners' abilities, and the reading task, thereby contributing to a better understanding of factors that can affect how EFL readers derive word meanings from a written text. More research is needed to make the picture of this interaction more complete.

Appendix

The text used in the think-aloud session

Is language, like food, a basic human need without which a child at a critical period of life can be starved and damaged? Judging from the drastic experiment of Frederick II in the thirteenth century it may be. Hoping to discover what language a child would speak if he heard no mother tongue he told the nurses to keep silent. All the infants died before the first year. But clearly there was more than language deprivation here. What was missing was good mothering. Without good mothering, in the first year of life especially, the capacity to survive is seriously affected.

Today no such drastic deprivation exists as that ordered by Frederick. Nevertheless, some children are still backward in speaking. Most often the reason for this is that the mother is insensitive to the cues and signals of the infant, whose brain is programmed to mop up language rapidly. There are critical times, it seems, when children learn more readily. If these sensitive periods are neglected, the ideal time for acquiring skills passes and they might never be learned so easily again.

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