Can Dictionary Skills Be Taught? The Effectiveness of Lexicographic Training for Primary-School-Level Polish Learners of English

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In the present paper we examine the question of whether dictionary reference skills can be taught effectively in the classroom. To this end, we test the reference skills of a group of Polish primary-school students attending English classes twice: prior to and following a 12-session specially-designed training program. Despite the subjects’ high confidence in their reference skills reported in the accompanying questionnaire, they performed rather poorly on the pre-test. Following a training program, the performance improves substantially and significantly more than in a matched control group. We conclude that a dictionary skills training program may be effective in teaching language learners at this level to use dictionaries more effectively, though different skills benefit to different degrees.

Background

Before the advent of the user perspective on lexicography, the needs of dictionary users had largely been ignored, or tacitly assumed to correspond with the current lexicographic production. As to the skills of the users, they had been taken for granted, or even assumed to match those of professional lexicographers. We now know that the above picture is a naive idealization, as the dictionary user studies conducted from the 1980’s onwards have revealed the gap between the sophistication of the typical dictionary structure and the inadequacy of the reference skills possessed by the average dictionary user. It seems that there may be two complementary ways to narrowing this gap: one, to make dictionaries more user-friendly, and two, to make users more skillful in using dictionaries. With regard to the user-friendliness of dictionaries, the last couple of decades has seen quite a bit happening in lexicographic practice and a fair amount of research as well. Unfortunately, the same cannot be claimed for dictionary skills training. Although, in response to numerous calls for including training in dictionary use in school and academic curricula (e.g. Ard 1982; Atkins & Varantola 1998; Barone 1979; Battenburg 1991; Beattie 1973; Cowie 1983; Crystal 1986; Griffin 1985; Herbst & Stein 1987; Mitchell 1983; Scholfield 1982; Tono 1984), some workbooks and other materials aiming to improve dictionary users’ reference skills have appeared (see Stark 1990 for an informative overview), no large-scale teaching of dictionary skills followed, and actual research into the effectiveness of training in dictionary reference skills has been negligible. Worthwhile exceptions include Kipfer (1987), Bishop (2001), Glowacka (2001), Carduner (2003), Chi (2003), which are summarized briefly in the next paragraph.

Kipfer (1987) used a workbook accompanying the Longman Dictionary of Contemporary English to train American high-school students in dictionary use and concluded that the instruction was effective. Bishop (2001) found that learners of French were helped by a dictionary-using training programme he designed. He noted an improvement in accuracy by 13%, and quality by 10% in the written compositions of the trainees, above the control group. Glowacka (2001) looked at the effect of training in dictionary metalanguage, but, contrary to expectation, found no improvement in the comprehension of dictionary labels following from in-class instruction explaining dictionary metalanguage. Carduner (2003) focused on students’ impressions of various dictionary skill-building exercises. Chi (2003) (Chi 1998 is a progress report on the same study) proposed the integration of instruction on dictionary reference skills into the foreign language courses, and found such an approach to be effective for tertiary-level students in Hong Kong. Her study was limited to the following five areas of skills: selecting
verb-noun collocations, recognizing style labels, extracting cultural information, alphabetical ordering, and recognizing phonetic transcription symbols.

We believe such research is vital, because how else are we going to find out if dictionary skills can be usefully taught at all? Clearly, the above isolated studies are not enough to settle the issue. It would obviously be very helpful to know first what reference skills are involved in dictionary consultation. In fact, an important reason for the lack of research on dictionary skills training is the fact that not much is known about dictionary reference skills themselves (Hartmann 1999). While we agree that a sound empirical basis is needed to establish the set of reference skills relevant in dictionary consultations, we nevertheless consider it worthwhile, before this stage in skills research is reached, to try to assess the usefulness of skills training using a provisional set of reference skills partially based on introspection, such as the promising six-stage taxonomy of reference skills proposed by Nesi (1999).

The study

2.1. Research goals

The primary research question of our study has been to verify whether direct and explicit teaching of dictionary use as part of English language instruction improves Polish primary-school students’ dictionary reference skills. Further, we also wanted to learn whether dictionary skills are routinely taught at this level, what is the subjects’ assessment of their dictionary skills, and to what extent skills are acquired naturally through unguided dictionary use.

2.2. Design, subjects and materials

To answer the above research questions, we employed a quasi-experimental design, using two existing teaching groups of the same level, of which one (experimental, N=28) received formal training in dictionary skills, while the other (control, N=29) did not. All subjects also filled in a dictionary-skills-related questionnaire. All 57 subjects were Polish final-year primary school children, aged between 12 and 13. Both groups were mixed-sex and had three hours of English instruction per week for the last school year, and had been learning English for five years. Two tests were used: a skills pre-test and post-test (see Appendix 2).

The dictionary reference skills pre-test and post-test contained 14 and 13 items, respectively. The post-test was based on the pre-test, but the post-test tasks were phrased in a different way to limit the learning effect from the pre-test itself. Also, two pre-test items were merged into one for the same reason. The skills tested are set out in Table 1 below. The dictionary used for the pre-test and the post-test was the bilingualized Polish version of Oxford Wordpower; Słownik angielsko-polski z indeksem polsko-angielskim published in 2000 (see Appendix 3 for a sample page). This is the most popular dictionary in Polish schools, according to a recent survey (Poluszyński 2006).

| REFERENCE | the ability to use a dictionary for equivalents, definitions, spelling, pronunciation and obtaining grammatical information; locating words using initial letters. |
| INFERENCES | the ability to establish and interpret parts of speech; the ability to correctly interpret meanings; finding and handling meanings; grammatical awareness. |
understanding dictionary conventions

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<table>
<thead>
<tr>
<th>Session</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>types of dictionaries and their use</td>
</tr>
<tr>
<td>2</td>
<td>alphabetical ordering of entries</td>
</tr>
<tr>
<td>3</td>
<td>information in entries and entry organization (microstructure – see Appendix 2)</td>
</tr>
<tr>
<td>4</td>
<td>symbols and abbreviations</td>
</tr>
<tr>
<td>5</td>
<td>guide words and their role</td>
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<tr>
<td>6</td>
<td>finding and using socio-cultural information</td>
</tr>
<tr>
<td>7</td>
<td>finding and selecting the right prepositions</td>
</tr>
<tr>
<td>8</td>
<td>checking meaning; locating inflectional forms of verbs</td>
</tr>
<tr>
<td>9</td>
<td>singular vs. plural nouns</td>
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<tr>
<td>10</td>
<td>countable vs. uncountable nouns</td>
</tr>
<tr>
<td>11</td>
<td>idioms and phrasal verbs</td>
</tr>
<tr>
<td>12</td>
<td>review</td>
</tr>
</tbody>
</table>

Table 2: Content of the reference skills teaching sessions

The treatment in the form of direct teaching of dictionary use was applied only to the experimental group. Thus, the control group did not participate in the teaching program taking place between the administration of the pre-test and post-test, and continued to follow the regular curriculum.

After the twelve sessions, both control and experimental groups filled out a dictionary skills post-test (see Appendix 2). As for the pre-test, the post-test was administered during class time.
and the working time for the completion was 45 minutes. Again, individual copies of the Oxford Wordpower; Słownik angielsko-polski z indeksem polsko-angielskim were used.

**Results and discussion**

**Questionnaire**

For reasons of space, only those few items from the questionnaire bearing most directly on the issue of dictionary skills training will be reported here, and only very briefly.

- **Question 18:** *Are you happy with your abilities to use a dictionary?*
  
  Only 4 subjects (14.3%) out of the 28 in the experimental group expressed their dissatisfaction with their abilities to use a dictionary. The rest, and all in the control group, stated that they were satisfied with their dictionary reference skills.

- **Question 20:** *Do you think that it is possible to learn how to use a dictionary?*
  
  All respondents in the two groups answered in the affirmative.

- **Question 23+24:** *Have you ever received training in dictionary use? If so, when, from whom, as part of which course?*
  
  Only 7 students (25%) in the experimental group, and none (0%) in the control group, reported having received training in dictionary use. Of the seven, 3 students had been trained during English classes, 2 students during Polish classes, and 2 said they had read a guide on how to use a dictionary.

- **Question 25:** *Have you ever read the instructions on dictionary use included in a dictionary?*
  
  Four students (14.3%) in the experimental and six (20.7%) in the control group admitted having read the instructions. The rest have never read the instructions.

In summary, the questionnaire has revealed that most subjects have not received training in dictionary skills, nor have they bothered to study the front matter instructions in their dictionaries. Most are confident of their dictionary skills, and they all think such skills can be learned, so we can infer that they believe they have acquired dictionary skills through natural dictionary use.

**Dictionary reference skills tests**

Table 3. gives the mean overall pre-test and post-test scores for the control and experimental groups, and these results are presented graphically in Figure 1. The overall score for each subject was calculated by summing up the scores for all tasks, with 108 points being the perfect score.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>mean pre-test score</th>
<th>mean post-test score</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTROL GROUP</td>
<td>29</td>
<td>44.17</td>
<td>48.38</td>
</tr>
<tr>
<td>EXPERIMENTAL GROUP</td>
<td>28</td>
<td>53.11</td>
<td>86.00</td>
</tr>
</tbody>
</table>

Table 3. Mean pre-test and post-test scores for the control and experimental groups
Both the experimental and control groups performed generally poorly on the pre-test. The mean pre-test score for the control group was 44.17, while the mean pre-test score for the experimental group was 53.11, that is 12% higher. There was no significant difference between the two groups (t=1.67, p=0.1, n.s.).

On the post-test, scores improved for both groups. The mean overall post-test score for the control group was 48.38, which was 4.21 points (or 9.5%) higher than the pre-test score. The improvement is statistically significant (Repeated Measures ANOVA, F(1,28)=6.71, p=0.015), but smallish in magnitude. In the experimental group, the mean post-test score group was 86.00, resulting in an improvement of 32.89, or 61.9%, which is highly significant (Repeated Measures ANOVA, F(1,27)=87.85, p<0.001).

To determine whether there was a significant difference in the degree of improvement between the control and experimental groups, a t-test was conducted on the mean improvements within the two groups. Individual measures of improvement were obtained by subtracting, for each subject, their pre-test score from their post-test score. The t-test on overall scores yielded a value of t=7.50, p<0.001, indicating that there is a highly significant difference between the two groups. Therefore, results obtained at the post-test stage give support to the claim that direct and explicit teaching improves students’ dictionary reference skills overall.

**Improvement by skill**

Having established the overall improvement resulting from the dictionary skills instructions, it is interesting to look more closely at the individual reference skills, as classified for the purposes of the present study. Table 4, below gives the scores and rates of improvement broken down by specific test item, corresponding to various skills and subskills, in the experimental group only. The degree of improvement for each skill is represented graphically in the bar chart in Figure 2, below.
<table>
<thead>
<tr>
<th>TEST ITEMS</th>
<th>PRE-TEST</th>
<th>POST-TEST</th>
<th>Improvement (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum possible score</td>
<td>Mean</td>
<td>Maximum possible score</td>
<td>Mean</td>
</tr>
<tr>
<td>1. Guidewords</td>
<td>6</td>
<td>2.44</td>
<td>6</td>
</tr>
<tr>
<td>2. Entry organization</td>
<td>7</td>
<td>3.79</td>
<td>7</td>
</tr>
<tr>
<td>3. Alphabetical ordering</td>
<td>17</td>
<td>12.79</td>
<td>17</td>
</tr>
<tr>
<td>4. Establishing parts of speech</td>
<td>10</td>
<td>6.41</td>
<td>10</td>
</tr>
<tr>
<td>5. Idiomatic expressions (in Polish)</td>
<td>3</td>
<td>1.06</td>
<td>6</td>
</tr>
<tr>
<td>6. Idiomatic expressions (in English)</td>
<td>3</td>
<td>1.17</td>
<td>6</td>
</tr>
<tr>
<td>7. Phrasal verbs</td>
<td>6</td>
<td>2.27</td>
<td>6</td>
</tr>
<tr>
<td>8. Diatopic symbols</td>
<td>7</td>
<td>2.68</td>
<td>7</td>
</tr>
<tr>
<td>9. Plural vs. singular nouns</td>
<td>16</td>
<td>4.06</td>
<td>16</td>
</tr>
<tr>
<td>10. Countable vs. uncountable nouns</td>
<td>12</td>
<td>2.93</td>
<td>12</td>
</tr>
<tr>
<td>11. Phonetic symbols</td>
<td>8</td>
<td>1.51</td>
<td>8</td>
</tr>
<tr>
<td>12. Ability to interpret and handle meanings</td>
<td>4</td>
<td>1.48</td>
<td>4</td>
</tr>
<tr>
<td>13. Pronouns and collocations</td>
<td>5</td>
<td>1.17</td>
<td>5</td>
</tr>
<tr>
<td>14. Devaluative, diaphasic or channel of communication symbols</td>
<td>4</td>
<td>0.72</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 4. Improvement by skill, experimental group

Figure 2: Percent improvement for individual skills in the experimental group
The specific reference skills tested in our study can be clustered into three groups, according to how much improvement in performance, as measured by the difference between the pre-test and post-test, followed from the skills instruction.

In the first group, huge performance improvement has been observed for tasks number ten (verifying students’ ability to differentiate between countable and uncountable nouns), eleven (dealing with phonetic symbols), thirteen (pronouns and collocations) and fourteen (decoding socio-cultural information). The above four skill areas appear to have received the greatest benefit from explicit teaching, as the subjects’ performance scores rose between three and four times following the training programme.

Exposure to direct teaching has also yielded noticeable progress in subskills such as the ability to differentiate between plural and singular nouns (task 9), the ability to handle and interpret meanings (task 12), the ability to locate and translate idiomatic expressions and phrasal verbs (tasks 6 and 7), dealing with guidewords (task 1), dealing with differences between standard American and British English (task 8). For the above skills, test scores improved approximately twofold following skills training.

Finally, modest improvement only can be observed in tasks 2 (entry organization), 3 (ability to establish parts of speech) and task number four (alphabetic ordering). Here, the test scores improved by a quarter to a half. Interestingly, the order of improvement in this last group of skills is generally similar to that found in Chi (2003). Very tentatively, one could suggest that primary-level students are able to benefit more from dictionary skills training than university-level students, perhaps because their deficits in this regard are greater at the outset.

**Conclusion**

Our subjects in their majority denied having received training in dictionary skills or having read the front matter instructions in their dictionaries. Yet, they believe that dictionary reference skills are learnable, and they hold high opinions of their skills. This suggests they think that they have picked up dictionary skills through natural dictionary use. However, the pre-test does not confirm the subjects’ confidence in their skills, as subjects performed rather poorly on tasks testing most reference skills. Following a training program, the performance of the experimental group improved substantially, and significantly more than in the control group. This result suggests that a dictionary skills training program may be effective in educating users at this level to use dictionaries more efficiently, though different skills benefit to different degrees. Future research in this area should aim to identify the most effective training procedures for specific dictionary skills, user levels and user types.
References


APPENDIX 1: Sample teaching materials: activity sheet dealing with entry organization

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Co znajduje się w słowniku?

- English definitions (angielskie definicje)
- Polish translation (polski odpowiednik)
- Different senses (różne znaczenia)
- Examples (przykłady użycia)
- Illustrations (ilustracje)
- Notes (dodatkowe informacje)
- Abbreviations (skróty)
- Idioms (wyrażenia idiomatyczne)
- Phrasal verbs (czasowniki frasowe)
- Grammatical information (informacje gramatyczne)
- Pronunciation (występuje)
- Collocations (kolekcje)
- Cultural information (informacje na temat kultury krajów anglojęzycznych)
- British vs. American English (informacje na temat wersji amerykańskiej lub brytyjskiej języka)

PODPISZ. Użyj wyrazów z ranki.

**tool** (tool, noun) [C] a piece of equipment that you use to help you do a particular type of job. Builders, electricians and so on use all kinds of tools. A word processor is an indispensable tool for a journalist.

**tool** (tool, noun) [C] a row of symbols on a computer screen that shows the different things that the computer can do.

**scale** (scale, noun) [C] a series of marks on a tool or piece of equipment that you use for measuring. The ruler has one scale in centimetres and one scale in inches.

**scale** (scale, verb) [I] to make something bigger or smaller in size. The map is on a smaller scale than the original manuscript.

**scale** (scale, noun) [C] a series of marks on a tool or piece of equipment that you use for measuring. The ruler has one scale in centimetres and one scale in inches. Increase the size, number, importance, etc. of sth. Police have scaled up their search for the missing boy.

**scale** (scale, verb) [I] to make something bigger or smaller in size. The map is on a smaller scale than the original manuscript.

**tool** (tool, noun) [C] a piece of equipment that you use to help you do a particular type of job. Builders, electricians and so on use all kinds of tools. A word processor is an indispensable tool for a journalist.

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APPENDIX 2: Dictionary Skills Post-Test (compressed typographically to save space)

1. Na górze strony w słowniku znajdują się tak zwane guide words, czyli słowa ułatwiające odnalezienie poszukiwanego hasła. Które z poniżej wymienionych słów znajdują się pomiędzy HOLIDAY i HOT. Zakreśl.

Hole, Hold, Hollow, Homely, Hunger, Hook, Hoot, Horsepower, Hot, Hotel, How

2. Odnajdź w słowniku hasło HOLD i odpowiedz na następujące pytania:

✓ Jakimi częściami mowy może być słowo HOLD?
✓ Jaką formę czasu przeszłego będzie miało słowo HOLD?
✓ Czy potrafisz zlokalizować wymowę słowa HOLD? (Jeśli tak to zapisz ją)
✓ Jakiekolokacje występują ze słowem HOLD?
✓ Czy potrafisz zlokalizować czasowniki frazowe w hasle HOLD? (Jeśli tak to zapisz)
✓ Czy potrafisz odnaleźć wyrażenia idiomatyczne w hasle HOLD? (Jeśli tak to zapisz przynajmniej jedno z tych wyrażeń)
✓ Jakie wyrazy można utworzyć z wyrazu HOLD? (Wypisz przykłady wraz z określeniem części mowy)

3. Ułoż następujące słowa w kolejności alfabetycznej.

milk, raisin, margarine, sugar, flour, ginger, yoke, yoghurt, mug, miner, microwave, melt, mince, make, fridge, freezer, fork

1…………., 2…………., 3…………., 4…………., 5…………., 6…………., 7…………., 8…………., 9…………., 10…………., 11…………., 12…………., 13…………., 14…………., 15…………., 16…………., 17………….,

4. Znajdź w słowniku dwa znaczenia podanych poniżej słów i zapisz, do jakich części mowy należą.

5. Użyj słownika i przetłumacz wytłuszczone fragmenty zdań.

1. Moim zdaniem, she is too greedy. ………………………………………….……...........
2. This snake is jadowity. ……………………………………………………….……...........
3. He is not pewny his plan. ………………………………………….……...................
4. He works hard to zrekompensować his lack of talent. ……………………………….......
5. His pomysłowo always surprises me. …………………………………………...........
6. They don`t wierzą w God. ……………………………………………...…….……...........
7. Które słowo jest w wersji amerykańskiej a które w brytyjskiej? Sprawdź w słowniku i zaznacz odpowiednimi skrótami.

POTATO CHIP ……..    POTATO CRISP……..DRAUGHTSMAN……… DRAFTSMAN……..  LORRY……. TRUCK……….  PETROL……. GAS …….

CZĘŚĆ MOWY  | POLSKI ODPOWIEDNIK
----------------- | -------------------
WELL          | 1.……………..…. 2………………
FINE          | 1.……………..…. 2………………
FLOWER       | 1.……………..…. 2………………
PAST          | 1.……………..…. 2………………
WAVE         | 1.……………..…. 2………………

6. Użyj słownika i przetłumacz wytłuszczone fragmenty na język polski.

1. On took after his dad. ……………………………………………………………..
2. Byłam chora, więc Robert took my place. ………………………………………
3. Nie lubię go, bo on makes fun of my sister. ……………………………………
4. Pracownicy cut down twenty trees. ………………………………………………
5. Miałam butterflies in my stomach. ………………………………………………
6. Mówilem żebyś keep away from Tomek. …………………………………………..
7. Które słowo jest w wersji amerykańskiej a które w brytyjskiej? Sprawdź w słowniku i zaznacz odpowiednimi skrótami.

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8. Sprawdź w słowniku następujące rzeczowniki: cloth, clothes, mice, geese, furniture, people, policemen, pyjamas. Czy występują one w liczbie pojedynczej czy w mnogiej? Czy posiadają one zarówno liczbę pojedynczą i mnogą?

<table>
<thead>
<tr>
<th>Liczba pojedyncza</th>
<th>Liczba mnoga</th>
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<tbody>
<tr>
<td>1.</td>
<td>1.</td>
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<td>2.</td>
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<td>6.</td>
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<td>7.</td>
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<td>8.</td>
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</tbody>
</table>

9. Odnajdź w słowniku rzeczowniki dollar, news, upkeep, hype, idea, vacation, violin, trash, mail, magic, overtime, furniture i podziel je na policzalne i niepoliczalne.

<table>
<thead>
<tr>
<th>RZECZOWNIKI POLICZALNE</th>
<th>RZECZOWNIKI NIEPOLICZALNE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. Czy wiesz jak odczytać transkrypcję fonetyczną? Odnajdź w słowniku słowa odpowiadające podanej transkrypcji fonetycznej.

/mɛt/ ......................
/rʌnd/ ......................
/sʌm(r)/ ......................
/dʒæm/ ......................
/mɑːtʃ/ ......................
/dʒi:nz/ ......................
/hɑtˈtel/ ......................
/oʊˈket/ ......................


Liśćek .............., Robić notatki .............., Brać coś pod uwagę .............., Znany z czego ..............

a). The hotel is noted for the food.
b). Mike always takes notes in class.
c). He left a note to say he would be home late.
d). She is your mum. Take note of what she says.

The teacher notified us ABOUT / ON / OF the test.
She stuffed the chicken BY / WITH / IN apples.
I hit my head AT / INTO / TO the door.
He always binds himself FOR / TO / ON take care of his grandma.
They requested TO / ABOUT / FOR an orange juice.

Kobiety chcą być skinny/ slim.
Ona ma 140 cm. Ona jest small/ short.
Ludzie którzy są fat/ obese potrzebują pomocy lekarskiej.
Bardzo mi przykro ale on kicked the bucket/ passed away.
APPENDIX 3: Sample page from the dictionary used in the study, Oxford Wordpower; Słownik angielsko-polski z indeksem polsko-angielskim