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Learning English grammar with a corpus: Experimenting with concordancing in a university grammar course

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Abstract

Corpora have been used for pedagogical purposes for more than two decades but empirical studies are relatively rare, particularly in the context of grammar teaching. The present study focuses on students' attitudes towards grammar and how these attitudes are affected by the introduction of concordancing. The principal aims of the project were to increase the students' motivation by showing them that English grammar is more than a set of rules in a book and to enable them to assume more responsibility for their own learning. The idea was to introduce the use of language corpora into the curriculum for first-semester English at Växjö University in Sweden, as a complement to grammar textbooks and ordinary exercise materials. Between classes, the students worked with problem-solving assignments that involved formulating their own grammar rules based on the examples they found in the corpus. In the classroom, a system of peer teaching was applied, where the students took turns at explaining grammatical rules to each other. Besides presenting a new way of working with grammar, we also provided the students with a tool for checking questions of usage when writing English texts in the future, since the corpus we use is free of charge and available to all. The work with corpora and peer teaching was evaluated by means of questionnaires and interviews. This article describes and evaluates this initiative and presents insights gained in the process. One important conclusion is that using corpora with students requires a large amount of introduction and support. It takes time and practice to get students to become independent corpus users, knowing how to formulate relevant corpus queries and interpret the results. Working with corpora is a method that some students appreciate while others, especially weak students, find it difficult or boring. Several of the students did not find corpora very useful for learning about grammatical rules, but realized the potential of using corpora when writing texts in English.

Keywords: grammar, corpus, exploratory learning, peer teaching, higher education, classroom research, action research

1 Introduction

Corpora have been used for teaching purposes for more than two decades (see, for example, Johns, 1986), but Römer (2006:121, citing Mukherjee 2004) claims that "most recent research shows that the English language teaching practice, at least in Germany,

has been largely unaffected by the developments in corpus linguistics". Chambers (2007:3), on the other hand, believes that "consultation of corpora by learners appears to be increasing in higher education". It may be increasing to a small extent. In Sweden and elsewhere, corpora have mainly been used at higher levels at university, particularly by third- and fourth-semester students doing linguistic research for their term papers. Lexical searches are the easiest type of search to be done in a corpus, and several studies have dealt with collocations and lexico-grammatical patterning along the lines suggested by Sinclair (2004). For a detailed and very useful survey of twelve major studies on the use of corpora for the teaching of lexis, grammar and writing, see Chambers (2007). She concludes, among other things, that most of the experiments are carried out by corpus enthusiasts, and that the methodology is not likely to spread widely until it is introduced in language teacher education where, however, the schedule is already very full. A second conclusion is that all the studies are based on work in class, whereas corpus consultation may have its greatest future outside the classroom. As will be seen below, the present project to some extent corrects both these flaws in that one of the student groups consists of student teachers and in that most of the students' corpus work is carried out between classes.

As teachers of grammar in an English proficiency course for Swedish first-semester university students, we have often been concerned about the negative attitudes that many students have towards grammar, many of them finding it boring and difficult. The grammar module has been improved over the years and nowadays contains substantial components of peer discussion and problem-solving activities, but it is still difficult to motivate many of the students. Moreover, several students have severe problems in applying grammatical rules in their own writing, even though they have studied English for many years in school before they enter university. In Sweden all children start learning English from the age of nine or ten, some even earlier. Still, some areas of grammar tend to be particularly problematic, even at university level, such as subject-verb agreement and the use of articles.

Regardless of their plans for the future, most people studying English can benefit from being able to use a corpus. It can be used, for instance, to check issues concerning English usage when writing a text, translating a text or proofreading another person's text; Kennedy and Miceli (2002:189) suggest areas such as false friends, near synonyms, word order and verb constructions. Could it also be useful for learning about grammatical rules? This is what we wanted to test in the project. A number of studies (Gaskell & Cobb, 2004; O'Sullivan & Chambers, 2006) have addressed grammatical issues in their studies, but the focus was primarily on writing.

In order to promote a more exploratory approach to grammar learning among our students, a project called *Corpora in grammar teaching – towards higher motivation, deeper understanding and more solid proficiency in English grammar* was initiated. The two-year project, funded by the Swedish Council for the Renewal of Higher Education, started in July 2005 and involves staff and students at the School of Humanities at Växjö University in Sweden. The project organizers are three members of staff and two former student teachers who took the course a few years before the project started and thus knew it from a student perspective[1]. At the time of writing we are in a phase where the project ideas have been tested twice and the outcomes are being evaluated.

1. In addition to the authors, the project group consisted of Emil Tyberg, lecturer, and Maria Karlsson and Sara Månsson, students.

2 Methodology

2.1 Research context

As pointed out by Cobb (1997:301), Kern (2006:193) and others, there have been relatively few empirical studies actually evaluating the outcome of using corpora for learning and teaching. Chambers (2007:5) also points to the fact that most empirical studies have involved small numbers of students. The phenomenon of peer teaching has, just like the use of corpora in learning, attracted fairly little attention from researchers. This is particularly true of the type of peer teaching used in this project, i.e. "same-level peer teaching" (where students at the same level "teach" each other), whereas "cross-level" peer teaching, where students at higher levels "teach" students at lower levels, has been more frequently used and investigated (Boud, Cohen & Sampson, 2001:4–5).

Since the project is based on the researchers' practice and since two of the members in the project group taught the classes,[2] the methodology can be characterized at least partly as action research, more specifically of the type which stresses reflective practice and is carried out by the "teacher as researcher", although the focus has often been on school teachers rather than on university teachers (cf. Cohen, Manion & Morrison, 2000:230–234). As Cohen *et al*. show (*ibid*.: 226–241), the term 'action research' has been interpreted in various ways. For the present purposes, the following aspects are most relevant:

- The aim is both to improve practice and to contribute to scientific knowledge which should be made accessible to others.
- The study uses feedback from the data in an ongoing spiral of revising the research methodology.
- The study stresses reflection on practice and is mainly qualitative, but supported by quantitative data.
- The aim can be to replace a traditional method (learning grammatical rules from a grammar book) by a more exploratory one (drawing conclusions about grammatical rules from authentic corpus examples).

Finally, Cohen *et al*. (*ibid*.: 235) point to four main stages in the action research process, all of which have clearly been present in our project: planning, acting, observing and reflecting.

2.2 Teaching and learning methodology

The project combines several teaching and learning methodologies. One is the idea that exploratory learning is a way of improving learning outcomes (e.g. Manning, 1996:24; Kennedy & Miceli, 2001:71; Bernardini, 2004:16–17). Furthermore, authentic teaching material is generally accepted as having pedagogical advantages over non-authentic material, since it presents language as it is used in real communicative contexts (Johns, 1998:11; Aston, 2000:12). However, as pointed out by Widdowson (2003:82) and

2 First semester: Maria Estling Vannestål. Second semester: Emil Tyberg.

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Kaltenböck & Mehlmauer-Larcher (2005:69), what concordance lines usually provide is local co-text, not global communicative context. Nevertheless, it can be argued that the concordance line is superior to the invented example, as corpora provide attested examples of language use, and a simple click enables the learner to view the context in greater detail if a particular example presents difficulties. The project also includes peer teaching, where the assumption is that students learn more when they have to explain an issue to someone else (e.g. Whitman, 1998:5; Boud, Cohen & Sampson, 2001:3). Our hypotheses were that using these methodologies would increase student motivation and also improve their ability to explain and apply grammatical rules.

3 Implementation of corpus work

3.1 Course description

The grammar course in which the language corpus was used is part of a more comprehensive proficiency course for first-semester students of English, which also includes vocabulary training, academic writing and oral presentations. The course is taken both by students aiming to become teachers or international administrators and by students who study English as an independent course. Contrary to many other courses at our English department, which are taught in five-week modules, the proficiency course runs all through the semester, since it is believed that proficiency development is a process which needs to be practised over time. Students are divided into groups of around twenty and meet the teacher for twenty sessions, nine of which are devoted to grammar. The students are further divided into groups of four or five, which meet between classes in order to discuss grammatical problems and review each other's compositions.

3.2 Two trials

In the first trial, we used one experimental group and one control group (with around twenty students in each). In the experimental group, some of the ordinary problem-solving exercises whose answers could be found in the grammar book were replaced by corpus exercises (see Section 3.3), whereas the control group used the grammar book and regular exercises only. The students were all from the teacher-training programme and we endeavoured to create two groups that were as similar and comparable as possible (see Appendix 1). The two groups contained fairly equal proportions of males and females and students with a Swedish vs. a non-Swedish background. The students in the two groups further seemed to have done equally well in upper secondary school, their grades being very similar. To make the two groups as similar as possible from a proficiency-level point of view, we also used the results of the diagnostic test which all students take at the beginning of the semester. This diagnostic test consists of fifty fill-the-gap questions where grammatical structures occurring in authentic sentences are to be translated from Swedish into English and fifty multiple-choice questions where words occurring in authentic sentences are to be translated from English into Swedish. The control group had done marginally better in the diagnostic test, scoring 53 out of 100 as compared to 51 for the experimental group. Twenty students from each group

answered the first questionnaire (three people were absent in the control group) and fourteen and sixteen students from the corpus group and the control group respectively filled in the second one (some students had dropped out from the course and several students were absent in the final seminar when the evaluation was carried out).

Unfortunately, some characteristics of the experimental group proved to be disadvantageous to the experiment. For instance, more students from the control group were aiming at becoming teachers at a lower school level as compared to the students in the control group, and we have often experienced that primary school student teachers are less motivated for grammar studies than secondary school student teachers. It was also soon discovered that the experimental group in particular included some really weak students.

In the second trial, we abandoned the idea of using an experimental group and a control group (see Section 4 for a discussion) and instead all 35 students (this time from the international administration programme) were introduced to corpora. Their upper secondary school grades were similar to those of the students in the first trial, but the average score on the diagnostic test was some ten points higher than the previous semester, which indicates that – as a whole – these students were better at English than the students taking part in the first trial. We also made some modifications to the exercises and the overall set-up (see further Section 5.2). Twenty-eight students answered the first questionnaire and twenty-seven students answered the second one.

3.3 The corpus work

The corpus used for the exercises was the Cobuild Concordance Sampler (the free on-line version of the Cobuild Corpus). This demo version consists of a selection of the full corpus (some 56 million words of spoken and written British and American English), and the output is restricted to 40 concordance lines for each search. In earlier studies, a variety of corpora have been used, and arguments have been presented both for large general corpora and smaller, sometimes domain-specific corpora (see Chambers, 2007:8–9 for an overview and discussion). The reasons for choosing the Cobuild Concordance Sampler were that (a) it is free of charge and available on the Internet, thus facilitating access between classes and in the future; (b) it has a search program that is more useful for grammatical searches than, for instance, BNC Simple Search, another free on-line corpus; (c) it is big enough for most types of grammatical problem-solving, and (d) it contains both British and American English, which makes for comparisons of these two varieties. The fact that the corpus is freely available means that the students were provided with a tool that they might use in the future, after the course had finished.

The first two two-hour sessions started with a discussion of what "grammar" is for the students, their experiences of learning grammar in school and their attitudes to grammar. As expected, many students associated the word "grammar" with a boring book of rules and equally many exceptions, and several of them described very negative experiences from school, involving teachers who either disregarded grammar entirely or taught it with great reluctance. The rest of the introduction was devoted to an introduction to corpora in general and to the Cobuild Concordance Sampler in particular. The students carried out introductory exercises initially based on printed-out concordance lists. Such indirect access to the corpus at a preparatory stage is similar to the teacher-made

concordances provided in the experiment reported in Gaskell and Cobb (2004:306–307). At the next stage, the students carried out hands-on exercises on the computer. The teacher presented different search techniques and pointed to the importance of looking at the context of a keyword in a concordance list, and to the fact that a concordance list may include lines that have to be disregarded for various reasons – they may for instance contain examples that are not relevant for the construction under study, plain errors, misprints etc.

After the introduction, the students explored a number of problematic grammatical areas with the help of the corpus exercises developed in the project. A problem encountered at the preparation stage was the scarcity of actual examples of exercises that could be used as a source of inspiration for the exercises we planned to create in the project. A few exceptions are Tribble and Jones (1997) and Johns (*Tim Johns data-driven learning page*).[3]

The students were instructed to do the exercises in pairs between classes, half of the pairs doing some of the exercises and the other half doing the rest. The students thus carried out most of the corpus work outside the classroom, either at home or on public computers at the university. CALL activities outside the classroom have so far not been dealt with extensively in the literature (Egbert, 2005a:4; Chambers, 2007:13). The corpus queries had been formulated in the project, so the task for the students was to type in these queries and draw conclusions about grammatical rules based on the concordance lines appearing on the screen. The exercises were of various kinds and levels of difficulty, but we tried to create exercises where the interpretations would be relatively straightforward. Some grammatical problems that were originally planned to be included thus had to be discarded, simply because they could not be solved in an easy way by means of corpus searches. Figure 1 shows an example of an exercise created in the project.

Other examples of topics dealt with in the exercises are uncountable nouns, invariably plural nouns, subject-verb agreement, article usage, tense, the simple vs. the progressive form, verb complementation, adverbs in *-ly*, *it* vs. *there* and *who* vs. *which*.[4] The final task was to formulate one's own usage question and corpus query.

In the classroom a system of peer teaching was implemented, based on the students' work at their computers. They worked together in groups of four (i.e. two pairs) and took turns at "teaching" each other (one pair teaching another pair), which meant that everybody was continuously engaged in the language-learning process. The importance of varying the roles of "tutor" and "tutee" is pointed out by Falchikov (2002:82). The students were encouraged to get involved in discussion rather than just presenting information. While they were at work in the peer groups, the teacher walked around listening to the discussions and helping out if the students ran into problems. Sometimes, for instance, the pair responsible for presenting a particular grammatical problem had not fully understood the exercise or how to interpret the results of their

3. A visit to Karlstad University, where corpora are used in teaching to a small extent (and have previously been used on a larger scale in a project similar to the present one, see Granath, 1998), provided further ideas for how the corpus exercises could be created.

4. The exercises produced in the project are freely available for downloading from: http://www.vxu.se/hum/utb/amnen/engelska/kig/.

Corpus exercise on *dozen, thousand, million* and other numerals

A. Two of the following phrases are correct expressions. Use the corpus to find out which ones.

(a) two dozen eggs
(b) two dozens eggs
(c) two dozens of eggs
(d) a dozen of eggs
(e) dozens of eggs

Queries: two+dozen|thousand|million+NNS
two+dozens|thousands|millions+NNS
two+dozens|thousands|millions+of+NNS
a+dozen|thousand|million+of+NNS
dozens|thousands|millions+of+NNS

Results:
correct: _____
_____

incorrect: _____

Example sentences from the corpus:
_____
_____

B. How would you translate the two correct expressions into Swedish?

(a) _____

(b) _____

Fig. 1. Example of a corpus exercise 1.

corpus study. Finally, the teacher went through the answers to the corpus exercises in the whole class, together with the students, in order to make sure that everybody had understood what could be learned from the corpus data.

4 Evaluation

As mentioned above, different methods of evaluation were used in the two trials. In the first semester, we applied a system with an experimental group and a control group in order to be able to compare the outcomes of corpus activities and our regular activities. However, such an approach is not always optimal, as discussed by for instance by Cobb (1997:302) and Huh and Hu (2005:16). Pawson and Tilley (1997) point to several problematic aspects, a few of which will be presented here. First, it is difficult to establish what actually causes differences in the results of a study involving an

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experimental group and a control group. For instance, the well-known Hawthorne effect refers to the fact that an experimental group can improve their results simply because they benefit from the experience of being "the chosen few". A study involving an experimental group and a control group also requires a substantial amount of statistical data if any safe conclusions are to be drawn, and that was not the case in our project. A study of this kind also tends to lend itself to a focus on negative results. That is, if a new idea is tested and it turns out not to be successful for *everybody* in the experimental group *all the time*, it is easy to draw the conclusion that the new methodology is not successful at all, even if it is perhaps successful for *some* people *sometimes*, which may in itself be a positive outcome. Furthermore, there is the ethical aspect of using an experimental group and a control group, i.e. not providing the control group with access to something that is believed to lead to improvement of some kind. Finally, regarding this particular project, students in both groups expressed some dissatisfaction with the fact that there were different ways of working in the two groups. Some students in the experimental group complained about having a heavier workload than the students in the other group, and some students in the control group were disappointed at not having being introduced to corpora. We therefore decided to use corpora in both groups in our second trial. In this, the dimension of the evaluation that concerned a comparison between corpus activities and our regular grammar activities was lost. On the other hand some of the problems mentioned above were avoided, such as focusing on negative outcomes and withholding a tool that was believed to be useful from one of the student groups.

The students in the first trial were evaluated from two different perspectives: the development of their attitudes to the study of grammar and the development of their actual knowledge of grammar, whereas the focus in the second trial was on attitudes. The attitudes and the students' own perception of their development were investigated by means of questionnaires containing rank orderings as well as open questions (Cohen, Manion & Morrison, 2000:261). The questionnaires were handed out to the students in both semesters, one at the beginning and one at the end. Both questionnaires included some general background information: sex, age, first language, parents' education, grade in English from upper secondary school, a self-evaluation of the students' knowledge of English (reading, writing, listening, speaking skills and grammar), information about other foreign languages studied at school and (for the student teachers) what school level they were aiming at. The rest of the first questionnaire (at the beginning of the semester) comprised questions about the students' experiences from school and attitudes to and expectations of the grammar course (see Appendix 2). The questions in the second questionnaire (at the end of the semester) focused on the students' attitudes after the course, the extent to which their expectations had been fulfilled and their opinions on working with corpora and peer teaching (see Appendix 3).

In the first semester, the experimental group and the control group were further compared in terms of an initial diagnostic test (see Section 3.2) and their final exams. As pointed out by Egbert (2005a:6–7), "it is difficult to measure learning results over short periods of time, and sometimes even over longer ones", there being so many confounding factors. However, since all students' knowledge and proficiency is normally tested anyway, we included these tests in our evaluation process. The students in the experimental group and the control group sat the same regular exams at the end of

the semester: a grammar test and a composition test. The reason for including the composition test in the evaluation is that one of the aims of the project was to increase our students' ability to apply grammatical rules to their own writing. The grammar test consisted of translation sentences, explanation tasks and spot-the-mistake tasks. In the composition test the students had to write a 700-word composition on a topic from a list given out one week in advance and were allowed to bring a grammar book and a monolingual dictionary to the examination hall. These measures are taken in order to provide a writing situation which is as natural as possible, while still being in control of the students' writing and avoiding plagiarism or the risk of someone other than the students themselves writing the compositions.

The students taking the grammar course in the second semester were interviewed about their experiences and opinions of the corpus work. These semi-structured group interviews were carried out according to an interview guide (see Appendix 4) by an independent interviewer in the groups in which the students had been working throughout the course and were then transcribed by us (for the interview methodology, see Cohen, Manion & Morrison, 2000:267–292). The combination of quantitative and open questionnaire questions, quantified examination grades and the researchers' qualitative reflections makes this a mixed methods study of the kind recommended by Huh and Hu (2005:18–19).

5 Results

5.1 Results from the first trial

The first trial started in January 2006 and finished in June. The introduction went very well, and the students seemed to have understood, at least superficially, what they were supposed to do. A brief mid-semester evaluation showed, however, that many students found the corpus work difficult. Some students felt that technical problems (slow Internet connections at home, the Cobuild website not always working) and the fact that they sometimes did not understand how they were supposed to interpret the corpus results prevented them from carrying out their tasks in a satisfactory way.

There were also a number of outside factors that influenced the corpus work in a negative way this semester: unfortunate scheduling, which resulted in very little time between classes for some parts of the semester; a very heavy workload in another course partly running parallel with the proficiency course, which resulted in the grammar coursework not being prioritized; an unusually large number of weak students and a remarkably high incidence of personal problems among the students, such as illness and family members being ill or dying. Several students dropped out of the experimental group, but none from the control group, so at the end of the semester the former comprised 14 students, while the latter comprised 23 students. At this point we did not feel that our expectations had been fulfilled, and it was with some apprehension that we started the evaluation process.

5.1.1 Questionnaires

Comparing the questionnaire answers from the two groups at the beginning of the semester reveals that, as for attitudes to grammar, the experimental group on average thought that grammar was more "difficult" and more "boring" than the control group

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did. However, they also found grammar slightly more "useful" than the control group did, so it seems that they had at least some extrinsic, if less intrinsic, motivation. Our hypothesis was that the students would be more positive towards grammar after the course, and that the improvement in attitude would be greater in the experimental group.

As shown in Figure 2, several students in both groups were more positive towards grammar after the course: 35% (5 students out of 14) in the experimental group and 75% (12 students out of 16) in the control group were much more or slightly more positive, while 29% (4 students) in the experimental group and 13% (2 students) in the control group were slightly more negative. Equally, many students had not changed their attitudes. So the first part of our hypothesis, that the students would be more positive, was supported to some extent, but the second part, that the improvement would be greater in the experimental group, was not. On the contrary, the figures even indicate that the corpus work had been detrimental to attitude improvement. This idea was further confirmed by the fact that none of the students mentions the use of corpus activities as a reason for a positive change in attitude. Instead they point to factors such as knowledge improvement and a good teacher.

In one question we asked the students about the extent to which their expectations of improving their general English proficiency, understanding of English grammar and ability to explain grammatical phenomena had been fulfilled. Our hypothesis was that the experimental group would find that their expectations had been fulfilled to a higher extent. The results are given in Figure 3.

Figure 3 shows that both groups found that their expectations had been fulfilled, at least to a fairly high extent: on a scale from 1 to 7, the average scores for fulfilled expectations regarding proficiency, understanding and explaining were between 4.3 and 5.4. The control group's expectations were fulfilled to a slightly higher degree, and again our hypothesis was not supported (and *our* expectations not met) – these were rather disappointing results for a corpus enthusiast.

Does this mean that these students have been scared away from corpora for life? In another question, we asked the students in the experimental group whether they thought

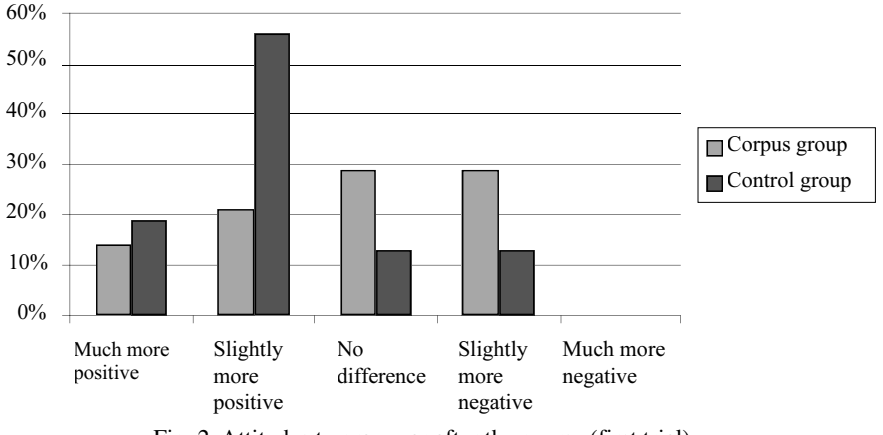

Fig. 2. Attitudes to grammar after the course (first trial).

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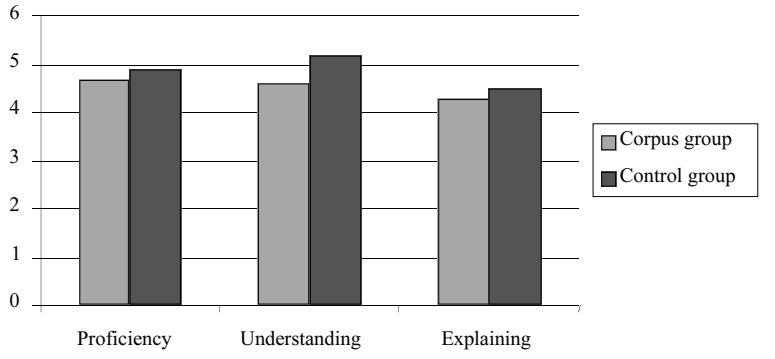

Fig. 3. Fulfilment of expectations (first trial).

they would use corpora for certain purposes in their future working career. The results are given in Figure 4.

Surprisingly, considering the answers to the previous questions, most students were positive towards corpus use, especially for answering questions from pupils and marking papers, but also for their own writing. They were more dubious, however, about using corpus methodology in their own classrooms. Only one student was totally against using corpora in the future. The following comments from our students illustrate both positive and negative opinions on using corpora:

A very good tool, both for teachers and students.
It's more fun to work with corpora.
A bit tricky at the beginning but good when you understand how it works.
I actually use the corpus to look up things for my compositions, not just for the exercises.
Feels like just a lot of counting.
It takes a lot of time and I don't like it at all.

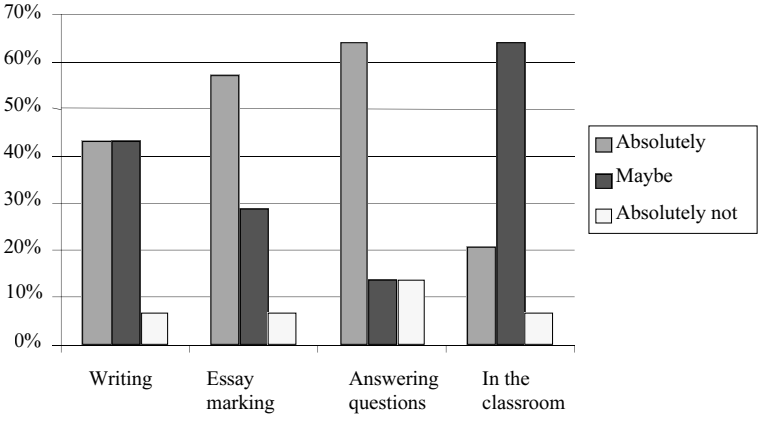

Fig. 4. Future use of corpora (first trial).

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5.1.2 Examination results

Our hypothesis was that the corpus students, who had worked in peer teaching groups, would have improved their grammar skills more than the control group and especially score better on the explanation questions. However, when we calculated the mean scores, the experimental group ended up with 49 points and the control group with 51 out of the possible 70 (see Section 4). As mentioned above, the difference between the groups in the diagnostic test at the beginning of the semester was also 2 points in the control group's favour. Thus the control group had learned exactly as much, or as little, as the experimental group and our hypothesis was not supported. As regards the results of the composition exam, we hypothesized again that the experimental group would do relatively better than the control group. The compositions were graded on a scale from A–E, where A–B is pass with distinction, C–D plain pass and E fail. The letter grades were given numerical values so that means could be calculated: A = 4, B = 3, C = 2, D =1, E = 0. The experimental group obtained an average grade of 1.43 and the control group 1.56. The fail rate in the experimental group was 36% (7/23) and in the control group 30% (5/14). Again the results failed to support our hypothesis since the control group performed at a slightly better level.

We were of course disappointed that our hypotheses about more positive attitudes and improved learning had not been confirmed and we were quite concerned about the future of the project. On the other hand we realized that the negative factors beyond our control had probably contributed to the results. Furthermore, most of our students – even if they had not learned more grammar with our corpus exercises – claimed that they were positive towards the idea of using corpora in the future, and this was indeed a positive outcome. However, some alterations were made in the second trial. These will be accounted for in the next section.

5.2 Results from the second trial

The second trial semester started in August 2006 and continued until mid-January 2007. As mentioned above, corpora were used in both student groups (each comprising just under twenty students) this time. There were also some changes to the set-up of the corpus work. The introductory sessions were carried out in more or less the same manner as the previous semester, but after the introduction the students did the first corpus exercises in class in the computer classroom, rather than between classes. This meant that the teacher could provide more support and explanations as to how the corpus work was to be carried out, how conclusions should be drawn, etc. Furthermore, the exercises were changed in several ways: the number of exercises was decreased, the layout was made clearer and there were more explicit instructions and introductory exercises where the students were asked to formulate their own corpus queries (based on preformulated usage questions). Figure 5 is an example of such an exercise.

Apart from these changes, the corpus activities were carried out in basically the same way as the previous semester, with students doing corpus exercises between classes. We further used the same questionnaires at the beginning and at the end of the semester.

5.2.1 Questionnaires

The results of the questionnaire from the beginning of the semester indicate that these

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Corpus exercise on *used to* vs. *be used to*

How would you formulate corpus queries to find out the difference in verb form (infinitive or *-ing* form) following the two structures *I used to…* and *I'm used to*? Tip: Write *I'm* as two separate words (i+m) in your query.

Queries: _____

_____

Results: _____

_____

Do you know why there is a difference?

_____

_____

Fig. 5. Example of a corpus exercise

students, who were not student teachers like those in the previous semester, found English grammar more "boring" and less "useful" than both groups of students in the first trial. They also found it more "difficult" than the previous groups, a result which contradicts the impression that these students were better at English, as suggested by the diagnostic test. On the other hand, one should bear in mind that the results of diagnostic tests and self-assessment are not necessarily reliable in terms of actual knowledge.

At the end of the semester, the majority of the students had a more positive attitude to grammar after the course than before it started. Figure 6 illustrates the results.

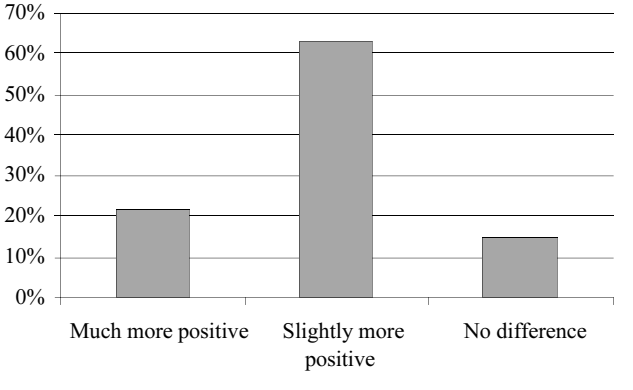

Fig. 6. Attitudes to grammar after the course (second trial).

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As shown in the figure, 63% (17 students) had a slightly more positive attitude and 22% (6 students) had a much more positive attitude, whereas 15% (4 students) had not changed their attitude. There were no students who expressed a more negative attitude to grammar after the course. However, the change of attitude in a positive direction is not ascribed to the use of corpus activities, but mainly to knowledge improvement and a good teacher – the same factors that were mentioned by the students in the first trial.

As for the fulfilment of expectations, the results are presented in Figure 7. The figure shows that on a scale from 1 to 7, the average scores for fulfilled expectations regarding proficiency, understanding and explaining were between 4.6 and 5.2, and the results were thus quite similar to those from the first trial.

Finally, when asked about the likelihood of their using corpora in the future, again the majority of the students were positive, particularly about using them for writing texts in English, as illustrated in Figure 8.

5.2.2 Interviews

The interviews with the students show heterogeneous opinions in terms of attitudes to the use of corpora, but a few aspects recur in most of the interviews. One concerns the technical problems that many of the students had experienced:

> I lost my motivation when the program didn't work. Then I preferred reading in the grammar book.

It seems that the corpus often did not work when the students used it from their homes, and sometimes not when they used it at university either. This of course caused frustration and resulted in some students not prioritizing the corpus work, especially when they had other tasks to complete in the proficiency course or in other courses running parallel with this one. Another problem that many students mentioned was that they did not feel that they really learned how to formulate their own corpus queries:

> It is more difficult, because it feels like I don't really know how to do it. We could have talked more about this in the classroom.

The exercise battery included questions where the students were supposed to formulate

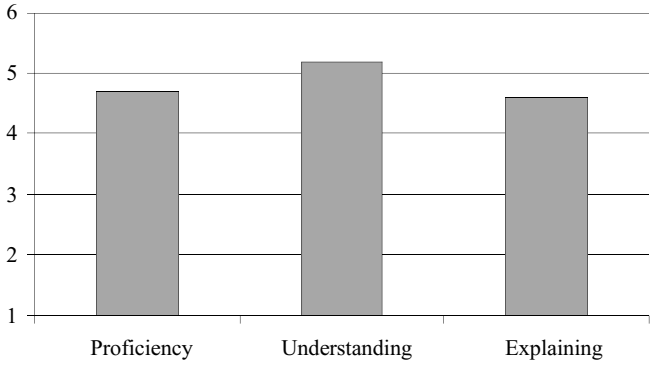

Fig. 7. Fulfilment of expectations (second trial).

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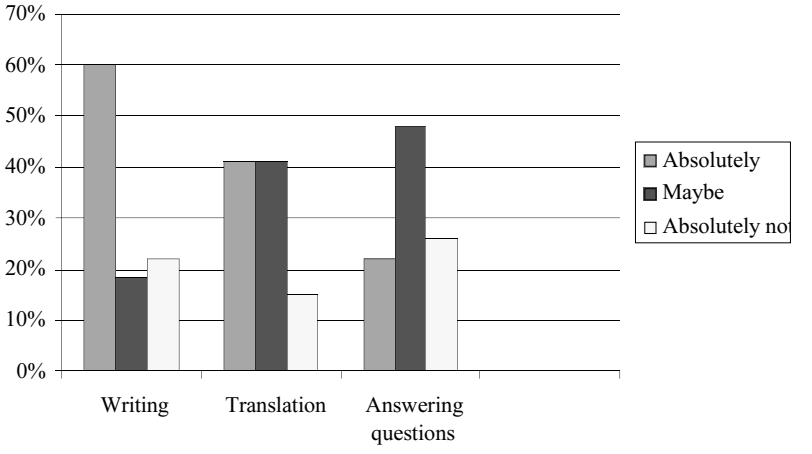

Fig. 8. Future use of corpora (second trial).

their own queries, but it seems that they would have needed more sessions in the computer room together with the teacher in order to master this type of task more proficiently.

Apart from these two aspects – the technical problems and the problems of formulating their own queries – the students' answers differed a great deal. Some liked using the corpus, finding this way of working more interesting than just reading in the grammar book. Others said that they preferred the more traditional way of reading about grammatical rules in the book and did not feel that they learned anything by doing corpus exercises. Some of these students felt that the exercises were too simple, dealing with areas that they already knew about, and thus felt that there was no point in examining these areas by means of a corpus.

When the tasks were too easy or too hard in relation to the students' skills, an unfavourable learning situation could occur: boredom in the former case and anxiety in the latter. Egbert (2005b:129–139) stresses the importance of finding the right balance between task and skills to achieve "flow".

Other students did not understand how to interpret the results of the corpus searches. They pointed to the fact that a corpus only provides examples from texts, no grammatical rules, and they had severe problems with this inductive way of working, a problem observed by, for instance, Gavioli (1996:83). Thus, it might not be as simple as Barnbrook (1996:140) puts it, *viz*. that "students can derive the information they need directly from the language, as though the computer were a tireless native speaker informant, with rather greater potential knowledge of the language than the average native speaker."

Another problem mentioned by some of the students was that one cannot really "trust" the corpus, since incorrect sentences may occur in the corpus and furthermore, as emphasized by, for instance, Johns (1998) and Aston (2000), a possible tendency may be incorrectly interpreted as a definite rule.

We also asked the students about the peer teaching aspect, and many students said that they enjoyed it, both explaining grammatical rules to other students and having

grammatical rules explained to them by their peers. Some students pointed to the fact that students sometimes explain things in a simpler way than a teacher does.

When asked about whether they would use the corpus in the future, many students said that they probably would use it (providing that it works), but – as mentioned above – they would have appreciated learning more about how to formulate their own queries. One student expressed the idea in the following way: "I think a corpus can be very useful if you just learn how to use it in the right way."

6 Discussion

Among the weaknesses of previous work on CALL listed by Huh & Hu (2005:10) is the tendency of researchers to assume that CALL techniques must be a good thing and to suppress negative results. In the present project we endeavoured to report positive and negative results in equal detail. A general conclusion, and probably the most important one that can be drawn from the project, is that introducing the use of corpora to students requires a great deal of time, support, patience, enthusiasm and reflection from the teacher. It is necessary to spend much time together with the students in front of the computers in order to help them get to grips with the corpus work. First, the students need help with purely technical matters ("How do I unblock pop-up windows?", "Why does the computer tell me that the query syntax is bad?" etc.). One of the most negative experiences was the technical problems that the students encountered. Second, they need clear guidance as to how they should draw conclusions from what they see on the screen. As pointed out by, for instance, Gavioli (1996), it is easy to overlook the difficulty of interpreting concordance lines, and the students have to be led very carefully into this process by looking at clear examples. Furthermore, the need for support does not stop after the introductory phase. The importance of training is stressed by, for instance, Cheng, Warren and Xun-feng (2003:183), Yoon and Hirvela (2004:277) and O'Sullivan and Chambers (2006:65).

When it comes to grammar, most students are so used to reading about rules before they see examples that it can take a lot of time and practice for them to understand how they should think when faced with a concordance list of authentic examples, from which they are supposed to extract rules of language usage. This is particularly difficult for weak students, as has also been observed by, for instance, Granath (1998) and Mauranen (2004). Some students felt that they learned less by using the corpus, rather than the other way round. Judging from the results of our project it is not obvious that corpora facilitate students' understanding of grammatical principles. One possibility that has been discussed among the project members is that corpus work maybe should be introduced through work of a more lexical nature (including phraseology) during the introductory semester, and grammatical structures saved for the second semester, when the students feel more comfortable with the methodology and the weakest students have usually left the programme.

Perhaps, as one student suggested, it would also be a better idea to focus on introducing the corpus as a tool for writing, rather than for grammar learning:

> When introduced to corpora I thought that it sounded like a good idea, and I still do. But I think that it is better to use it for composition writing, as a form of support, rather than to use it for learning grammatical rules.

Many students said that they could see the benefits of being able to use a corpus to get help with usage questions when writing texts in English. Most of the student teachers also realized the potential of using corpora when marking papers and answering questions from students. However, many students also pointed out that they did not feel that the course had made them understand how they should formulate corpus queries. If we want our students to become independent corpus users, we also need to put a lot of effort into teaching them how they should formulate their own queries. We tried to improve this aspect in the second trial, by introducing exercises where the students were instructed to formulate their own corpus queries, but this was obviously not enough. As pointed out by Chambers (2007:13), "there is no research directly focusing on independent corpus consultation by significant numbers of learners", so this is obviously an area where more work needs to be done.

Catering for the needs of all students in a student group is not an easy task, especially when the group is heterogeneous in terms of proficiency level, metalinguistic knowledge and motivation. One further complication which has been much discussed in recent years is the notion that students have different learning style preferences (cf., for instance, Brown 2000:112-134; Dunn, Denig & Lovelace 2001). As a teacher, one should always strive to present alternative ways of learning. It is possible that using computers in language learning can appeal to students with certain learning styles, but on the other hand one must also remember that some students do not appreciate using computers at all. In the project we have accordingly discussed the possibility of offering corpus activities for our students on a voluntary basis in the future, rather than having all students do the same thing. In this way, and especially if we also design other types of grammar activities, we could present several different ways of working with grammar, and thus perhaps cater more efficiently to the various needs of our students.

7 Conclusions

The project described in this article started out from the hypothesis that advanced EFL learners' motivation, grammatical understanding and general proficiency would be enhanced through the introduction of inductive learning by means of corpus work in the curriculum. However, as pointed out by Sun (2003:611), concordancing does not automatically lead to inductive learning in all students, one important factor being their previous lack of familiarity with inductive thinking.

In conclusion, even if none of our expectations were entirely fulfilled in relation to our original aims and in spite of many practical problems of various kinds, the project has provided a number of valuable insights. In particular, through the qualitative evaluation of the corpus work we have gained explicit knowledge about the students' experience of their learning situation. This is knowledge which can be used in further development of corpus-based teaching. In future work we hope, among other things, to be able to investigate more closely how students could best be trained to work independently with corpora, formulating their own queries and interpreting the results. Another interesting area of study would be how corpora could be used in teacher training, for instance, to contrast information found in course books used for language teaching with authentic language found in corpora.

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Appendix 1: Learner profiles

Semester 1: Spring 2006 (20 + 20 students at the teacher training program)

	Sex		Average age	First Language		Parents' education		
	Male	Female		Swedish	Other	Sec. school	Upper sec.	Tertiary
Corpus group	2	18	23	15	5	3	10	7
Control group	3	17	25	15	5	6	6	8

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	Grade in English[5]			Self-evaluation (grammar knowledge) Average 1–7 (1 = very bad, 7 = very good)	Self-evaluation (grammar knowledge) Average 1–7 (1 = very bad, 7 = very good	Teaching level aimed at		
	G	VG	MVG			Prim.	Sec.	Upper Sec.
Corpus group	1	13	5	2.9	4.5	11	1	8
Control group	1	11	4	3.7	4.7	7	4	9

Semester 2: Autumn 2006 (28 students at the international administration program)

	Sex		Average age	First Language		Parents' education		
	Male	Female		Swedish	Other	Sec. school	Upper sec.	Tertiary
Corpus group	6	22	22	17	11	4	11	13

	Grade in English[5]			Self-evaluation (grammar knowledge) Average 1–7 (1 = very bad, 7 = very good)	Self-evaluation (grammar knowledge) Average 1–7 (1 = very bad, 7 = very good
	G	VG	MVG		
Corpus group	2	16	3	3.1	5.0

Appendix 2: Questionnaire 1 (beginning of semester – abbreviated and translated from Swedish into English)

The questions in this questionnaire refer to the students' attitudes and experiences from school. Questions 1–4 were asked in relation to three levels (primary school, secondary school, upper secondary school) and concern grammar teaching in English, the students' first languages and other foreign languages.

1. How did you work with grammar in school (separately, integrated with reading, writing etc., no grammar)?

5. In the Swedish school system the following grades are used: IG = Fail, G = Pass, VG = Pass with distinction, MVG = Pass with special distinction. (The Swedish National Agency for Education, [www]). The grades in the table refer to the English course that Swedish upper secondary school students are required to have taken in order to study English in Swedish tertiary education. The grading system changed in 1994, and those students graduating from upper secondary school before this year were excluded from the statistics.

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2. What kind of teaching material did you use (a specific grammar book, a textbook where grammar was integrated, no grammar)?
3. What was your classmates' attitude to (negative 1 – positive 7)?
4. What was your teachers' attitude to grammar?
5. What do you think about learning English grammar (on a scale from 1–7): easy – difficult, interesting – boring, useful – not useful?
6. What is your experience of using computers in (a) school, (b) at home (on a scale from 1–7: little experience – a lot of experience)?
7. What do you think about working with computers (on a scale from 1–7): easy – difficult, interesting – boring, useful – not useful?
8. What is your experience of working in pairs/groups (on a scale from 1–7: little experience – a lot of experience)?
9. What do you think about working in pairs/groups (on a scale from 1–7: easy – difficult, interesting – boring, useful – not useful?
10. What are your expectations of the grammar course (on a scale from 1–7: to improve my English proficiency, to better understand how grammar works, to be able to explain grammatical rules to other people, to find my way in the grammar book, other things)?
11. What way of working with grammar would you prefer (on a scale from 1–7: explanations provided by the teacher – an exploratory working method, independently – in a group)?

NB! Throughout the questionnaire we also asked the students to add any other comments.

Appendix 3: Questionnaire 2 (end of semester – abbreviated and translated from Swedish into English)

1. What do you think about learning English grammar (on a scale from 1–7): easy – difficult, interesting – boring, useful – not useful?
2. Do you think that your attitude to grammar has changed this semester (much more positive, slightly more positive, neither more positive nor more negative, slightly more negative, much more negative)?
3. If your attitude has changed, what do you think is the reason?
4. To what extent has your expectations of the grammar course been fulfilled (see Appendix 2, question 10)?
5. On a scale from 1–7, what did you think about working (a) with the corpus, (b) in an exploratory way, (c) in pairs between classes, (d) in peer teaching groups in the classroom, with whole-class surveys?
6. How do you evaluate your own engagement in the course (1 = very inactive, 7 very active) concerning (a) reading the grammar book, (b) working with corpora in pairs between classes, (c) in peer teaching groups in the classroom, (e) in whole-class surveys?
7. How can the corpus work be improved in the future?
8. How can the peer teaching part be improved in the future?
9. Do you think you will work with corpora in the future:

- teachers: (a) when writing texts in English, (b) when marking students' essays, (c) for answering questions from students, (d) for classroom activities?
- international administrators: (a) when writing texts in English, (b) when translating texts, (c) for answering questions from colleagues and friends?

Appendix 4: (Interview guide – translated from Swedish into English)

1. What did you think when you heard that you would be part of a group that would use computers in grammar teaching? Fun? Scaring? Any other reactions?
2. What did you think about the introduction to corpora? Were the instructions clear? Were

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the introductory exercises comprehensible?

3. About the corpus work between classes:
   (a) Where did you usually work with the corpus (at home, at the university)? Did you have any technical problems?
   (b) Did you usually understand the instructions well enough to carry out the exercises?
   (c) Did you usually manage to draw conclusions about grammatical rules based on the corpus results?
   (d) How well did you manage to formulate your own corpus queries? Did you use the search guide at the back of your compendium to help you formulate queries?
   (e) How well did to work in pairs by the computer between classes? Did you feel that the workload was fairly divided between you?
   (f) Any other comments?
4. About peer teaching in the classroom:
   (a) How did you experience being the person explaining grammatical rules to your peers?
   (b) How did you experience having grammatical rules explained to you by your peers?
5. What did you think about learning grammar in this way (by drawing conclusions based on corpus results) compared to learning in the more traditional way (from a grammar book)? More difficult/easier? More boring/more fun? Any other comments?
6. Did you use the corpus for any other purposes, besides carrying out the grammar exercises? Why/why not?
7. Do you think the corpus will be of use to you in the future? In what way?