ИССЛЕДОВАНИЕ ВЛИЯНИЯ КОРПУСНОГО МЕТОДА НА УСПЕВАЕМОСТЬ СТУДЕНТОВ В ИЗУЧЕНИИ ФОНЕТИКИ АНГЛИЙСКОГО ЯЗЫКА

Ю. А. Кузьминых, С. П. Хорошилова (Новосибирск, Россия)

Проблема и цель. В статье представлены результаты исследовательского образовательного проекта, направленного на оценку эффективности внедрения корпусного метода в обучении студентов фонетике английского языка. Цель проведенного исследования состояла в выявлении эффективности корпусного метода подачи материала в сравнении с традиционным, а также оценки влияния выполнения упражнений на основе корпусного метода на учебную мотивацию студентов к изучению фонетики.

Методология. Авторами был проведен формирующий эксперимент с применением тестирования и анкетирования студентов. Формат тестирования предполагал предэкспериментальный и постэкспериментальный срезы. Оценка наличия статистически значимой разницы между результатами постэкспериментального тестирования в экспериментальной и контрольной группах была проведена с использованием критерия Пирсона. Участниками эксперимента выступили две группы студентов второго курса факультета иностранных языков Новосибирского государственного педагогического университета, которые на момент проведения исследования изучали курс практической фонетики английского языка.

Результаты. Применение корпусного метода в обучении иностранному языку разрабатывалось лингвистами и методистами в основном относительно грамматики и лексики, в то время как его системное использование в обучении произношению не отражено в изученной нами литературе. Разработанные авторами статьи упражнения на основе корпусного метода направлены на совершенствование таких процессов связной речи английского языка, как ассимиляция и элизия. Полученные результаты подтвердили более высокую эффективность корпусного метода в сравнении с традиционным при введении нового материала на занятиях по фонетике. Разница между результатами пред- и постэкспериментального тестирования в экспериментальной группе была признана статистически значимой, в то время как в контрольной группе разница оказалась статистически незначимой. Помимо этого, была зафиксирована статистически значимая разница между результатами постэкспериментального тестирования обоих методов обучения. Наконец, анализ проведенного анкетирования позволил сделать выводы о мотивации студентов к изучению фонетики. Согласно результатам опроса, внедрение...
корpusного метода оказал положительный эффект на студентов, повысив их заинтересованность и мотивацию к изучению произношения.

Заключение. Корпусный метод в обучении был признан одной из возможных альтернатив традиционным подходам к обучению произношению, что позволяет рассмотривать корпусный метод в качестве перспективной технологии для внедрения в систему высшего образования России. Результаты исследования подтверждают положительное влияние корпусного подхода на успеваемость студентов, а также на повышение мотивации студентов в работе над своим произношением.

Ключевые слова: корпусный метод; лингвистический корпус; фонетика; информационно-коммуникативные технологии; обучение; иностранный язык; эффективность; академическая успеваемость; мотивация

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Investigating the impact of corpus-based classroom activities in English phonetics classes on students’ academic progress

Abstract

Introduction. The paper introduces the results of an educational research project, aiming at the evaluation of the impact of the use of corpus-based set of classroom activities on students’ academic progress in English phonetics classes and their motivation to study English pronunciation. Consequently, the research objective was to find out the effectiveness of a corpus-based method of instruction compared to a traditional teacher-centered approach and to evaluate the impact of the use of corpora-based classroom activities during the input of a new material on students’ motivation to study phonetics.

Materials and Methods. The methods employed in the current research combined a questionnaire study and a pre-, and a post-test. The evaluation of the significance of differences in the test results of the two groups was done using chi-square analysis. The participants were two groups of the second-year students of the Faculty of Foreign Languages at Novosibirsk State Pedagogical University who were doing a practical phonetics course at the time of the experiment.

Results. The corpus-based method in teaching was developed mainly for grammar and vocabulary acquisition and no data was found about the research aimed at the impact of these activities on the learners’ pronunciation level. The designed corpus-based classroom activities explored English connected speech processes such as elision and assimilation. The attained results testify that a corpus-based method of instruction happened to be more effective than a traditional teacher-centered approach in introduction of the new material in the class of phonetics. The difference in pre-test and post-test results in the experimental group proved to be statistically significant, while in the control group the results appeared statistically insignificant. In addition, there was statistically significant difference found between the post-test results from the two teaching approaches. According to the questionnaire data, the application of corpora in the classroom had a positive impact on the students as it revived their interest and motivation in the process of learning pronunciation.

Conclusions. Corpus-based classroom approach proved to be one of the alternatives to the traditional ways of teaching pronunciation, which allows to consider corpora a perspective technology to be integrated into the academic environment in Russian university context. The results of the research demonstrated a positive impact of the use of corpus-based classroom activities on students’ academic progress in English phonetics classes as well as their motivation level.
Keywords
Corpus-based approach; Linguistic corpus; Phonetics; Information and communication technology; Teaching; Foreign language; Effectiveness; Academic progress; Motivation.

Introduction
Today’s data-driven educational landscape implies a lot of investigation devoted to how computers can facilitate language learning. Technology has played a part in the teaching since the earliest days. Computerization of the education is a proclaimed goal of contemporary schools and universities strategic development programs [23]. Corpus linguistics is believed to revolutionize teaching languages though still remains quite open for exploration. O’Keeffe, A. and Farr, F. [14], assert that the rapid developments in the use of language-related technology have not been matched by updated practices in teacher education. The inclusion of corpus linguistics in initial language teacher education would enhance teachers’ research skills and language awareness. This invaluable resource for studying the language in use should be tested and incorporated into language teaching and learning. According to Barlow M. (2002)1, corpora data is applicable to teaching in three areas: syllabus design, materials development and classroom activities. Corpus-based classroom activities have been developed by such prominent linguists as McCarthy M., Carter R. [12], Bernardini S. (2004)2. While their research works dealt mostly with corpora application in studying vocabulary and/or grammar patterns, Anderson W. and Corbett J. [1] also applied corpora to teaching pronunciation. The key features of corpus-based approach in teaching can be described as follows: language analyses, conducted by students; teacher’s supervision; the use of a corpus chosen by the teacher; learners’ self-discovered ideas about language patterns and usage. Corpora-based approach in language teaching stimulates learner autonomy by raising learners’ language awareness and is considered to be an example of data driven language acquisition.

The research background
To the best of our knowledge very little research has been done so far that would address corpus-based approach as an integral part of academic package in teaching phonetics at the University level. Our present research draws on our preliminary survey (2015)3. A pilot research project to evaluate the impact of corpus-based set of phonetic classroom activities on Russian University students’ motivation to study English pronunciation was conducted at Novosibirsk State Pedagogical University. The results proved that the students’ motivation to study pronunciation with the help of corpus linguistics underwent positive changes after the corpora application in the classroom. The present paper focuses on the description of the results of the second stage of corpora approbation in the university classroom, which was designed and launched after the successful realization of the first stage. This part of the research was aimed at the evaluation of the effectiveness of the use of corpus-based classroom activities in teaching

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pronunciation to university students majoring in English.

Normally Russian learners of English study the language in the academic environment with no direct contact with native speakers of English, they belong to the so called expanding circle group of English and are referred to as artificial bilinguals. As a result, Russian EFL learners experience great difficulties with understanding and production of fluent English speech samples [25]. Lack of practice and knowledge about such phonetic processes of fluent English speech as assimilation and elision leads to students’ speaking and listening apprehension. At the same time, the EFL teachers testify students’ lack of interest and motivation to study connected speech processes as these topics are rather challenging for students. This problem can be solved by the use of inherently interesting and motivating authentic materials and innovative methods that would facilitate students’ understanding of connected speech processes and enhance their overall performance in pronunciation classes. Thus, students’ progress in understanding of assimilation and elision processes was chosen as dependent variable for the experiment. The methods of instruction used in the experiment were chosen as independent variables. In our experiment the traditional teacher-centered format of the lesson, when the teacher explained the theoretical material on the topic with accompanying examples, was compared with a corpus-based approach, which implied the use of corpora-based classroom activities. The corpus-based tasks engaged the EFL learners in active consciousness-raising activities that focused their attention on particular patterns of assimilation and elision.

The literature overview

In today’s digital world computer-based teaching and learning is becoming a more pronounced characteristic of educational systems worldwide. Nowadays global competitiveness of educational institutions is measured against implementation of innovative methods and technologies into their educational landscape. ICT competence plays a crucially important role in this process. Sysoyev P. & Evstigneev M. in their research addressed the issue of foreign language teachers’ ICT competence development. The authors described components and content of ICT competency of foreign language teachers and developed criteria, indicators, and levels of ICT competence of foreign language teachers [19].

Corpus linguistics is claimed to be one of the central elements of computer-assisted language teaching. The peculiarities of corpora application in foreign language education have been investigated by McCarthy M., Carter R. [12], Anderson W., Corbett J.[11], Borodina T. [21], Sysoyev P. [23], Chernyakova T. [24], Deryabina I. [22], Conrad S. [6], Huang L.-S. [8], Bale, R. [2], Bardovi-Harlig K., Mossman S. and Vellenga H. E. [3], Benavides C. [4], Lin M. H. [10], etc.

They have examined different aspects of the application of corpus linguistics: methodology of compiling a learner corpus [10], the use of corpora in teacher education and development [6], methodological conditions for the development of lexical skills via language corpus [9], the teaching potential of corpus language material [14; 25], the potential of corpora data for students’ research work [12; 16], the use of corpus-based resources to create teaching materials [2–3; 15; 18; 22; 24], the application of corpora data in syllabus design [17–18; 25], corpus-based grammar classroom activities [4–5; 7; 20], corpus-based vocabulary classroom activities [9; 13], the use of corpora in teaching pronunciation [1], the use of corpora as a tool for teaching translation [5; 7; 11].
Krieger D. (2001) defines corpora as a databank of natural texts, compiled from writing and/or a transcription of recorded speech. According to Barlow M. (2002) corpus linguistics can be applied to teaching in three areas: syllabus design, materials development and classroom activities. The literature analysis clearly testifies that recently there has been a lot of research devoted to corpora application in studying vocabulary and/or grammar patterns, while the opportunities of the use of corpora in teaching pronunciation have been underestimated by the scholars. In the present paper we focused our attention on corpus-based classroom activities to develop students’ pronunciation skills.

The research questions were:
1. Is the use of the corpus-based classroom activities effective in teaching pronunciation to university students?
2. Is a corpus-based method of instruction more effective than a traditional teacher-centered approach?
3. Does the use of corpora-based classroom activities during the input of a new material have a positive impact on students’ motivation to study pronunciation?

Materials and Methods

The methods employed in the current research combined a questionnaire study and a pre- and post-experiment test. A comparative method of investigation was used as two regular university groups consisting of 10 students each were chosen to take part in the experiment. Before the experiment, both groups did a test on assimilation and elision, which revealed no statistically significant differences between the experimental and control groups’ test results ($\chi^2 = 0.23, N = 20, p < 0.05$). Afterwards, the ‘experimental’ group was given instruction on the processes of assimilation and elision with the help of the designed set of corpus-based classroom activities while the ‘control’ group was instructed by the teacher without the use of corpora data. During the final stage of the experiment, the post-experiment test was given to both groups in order to reveal the interdependence of the teaching method and the effectiveness of language acquisition. The evaluation of the significance of differences in the pre-experiment and post-experiment test results produced by the participating groups was done using chi-square analysis. Moreover, the participants from the ‘experimental’ group filled in the pre-experiment and post-experiment questionnaires to discover their attitude to the corpus-based method in teaching phonetics before and after the experiment.

The participants were two regular university groups (10 people each) of the second-year students of the Faculty of Foreign Languages at Novosibirsk State Pedagogical University who were doing a practical phonetics course at the time of experiment. Neither of the groups had a profound theoretical background on the processes of assimilation and elision prior to the experiment. During their first year at the University, they were trained on phonetic phenomena with some examples on assimilation and elision processes. The gender composition of the groups was mixed. The experimental group, as well as the control group, included 2 male and 8 female students aged 18–20. The native language of the participants was Russian, while English was their major at the university.


The set of designed corpora-based activities appeared to be a tool with the help of which the participants were offered to grasp the phenomena of assimilation and elision, discover the different types of assimilation and the principles, which regulated these phenomena. The most prominent contribution of corpus linguistics to the process of learning the language is free corpora availability on-line. To create a set of phonetic classroom activities for our project we made use of two corpora bases: SCOTS (the Scottish Corpus of Texts & Speech) and The Speech Accent Archive.

The nature of corpora data used provided the basis for the design of the set of phonetic activities, which falls under four categories: activities based on oral speech data; activities based on written speech data; activities based on transcribed texts and activities based on combinatory data which were used during the experiment.

The dependent variable ‘students’ understanding of assimilation and elision processes’ was measured with a pre-experiment and a post-experiment test designed to give a valid measurement of this feature. The test listed 20 words and short phrases, which covered the complete phoneme inventory and target cases of assimilation and elision, such as voicing/devoicing, manner of the release of plosive consonants, place and manner of articulation, lip position, soft palate position. The students were asked to transcribe and to write an articulatory description of a short word or phrase, for example <trouble.> or <did you>. The students were encouraged to analyze the examples as ‘spoken’ English, with systematic use of weak forms and evidence of connected speech processes (assimilation, elision), the style of transcription was supposed to reflect spontaneous speech as closely as possible. The participants were to transcribe a standard accent such as non-regional British English (RP). The maximum score for the test was 60 points.

The pre-experiment and post-experiment questionnaire included demographic questions (students’ age, gender, year in the university, the native language(s), the languages learnt in the university) and research questions. The format employed in research questions included Yes/No questions, and open-ended questions. These questions addressed the respondents’ experience with corpora, their attitudes to the use of corpora data in English phonetics classes, and the perceived impact of those activities on their attitudes and motivation to study English pronunciation. Sample questions are provided below:

1. Do you consider the corpus-based method in studying English phonetics useful?
2. Do you agree that the use of corpora data in English phonetics classes improves students’ language awareness?
3. What it the most useful aspect of the use of corpora data in English phonetics classes?

The participants from both groups were the second year students enrolled in identical phonetics courses taught by the same lecturer. The experiment was performed within the practical phonetics course and was completed in four training sessions (90 min each) in each participating group. The ‘experimental’ group’s lesson was built on the principles of guided discovery teaching approach. The participants were engaged in group discussions as well as individual task completion. The role of the teacher consisted in introducing the classroom activities based on corpora, monitoring the computer-based process of linguistic discovery and organizing the group discussion about the discovered assimilation/ elision regularities so that the students were able to fix the correct information. In the ‘control’ group the teacher explained the assimilation and elision processes...
to the students, illustrating the theory with the examples from the course-book, approved by the university administration. The experimental group instruction was given in a computer lab with internet access, while the control group lesson ran in a traditional classroom setting for Russian universities with one computer for the teacher. The experiment was conducted on the same dates in both groups. At the end of experiment both groups were given the knowledge check test during their class of practical phonetics. The tests for the experimental and control groups were identical. The students in both groups were to do the test in a paper format. The allocated time for the test completion was 20 minutes. The ‘experimental’ group was offered to complete the described-above pre-experiment and post-experiment questionnaires to find out the learners’ opinions about the activities constructed with the help corpora to study English pronunciation.

Results
The tests results were graded according to the Russian standards in Education where grade “5” is the highest mark while ‘1’ is considered the lowest. According to the pre-test results the academic progress of the experimental group before the experiment was 50 %, while 46 % was recorded for the control group, thus the difference in academic performance between the two groups before the experiment was statistically insignificant ($\chi^2 = 0,09, N = 20, p < 0,05$). After the experiment, the experimental group academic progress test results rose to 81 %, thus, the difference in academic progress in the experimental group before and after the experiment (50 % and 81 % respectively) proved to be statistically significant ($\chi^2 = 6,81, N = 10, p < 0,05$). The difference in the post-experiment test results between the control and the experimental groups (56 % and 81 % respectively) happened to be statistically significant ($\chi^2 = 4,21, N = 20, p < 0,05$).

All subjects from the experimental group (10 students) took part in the questionnaire to investigate their experience in studying with corpus-based approach, their attitudes towards the corpus-based activities and their motivation to study English pronunciation. After the experiment, 100 % of participants considered the corpus-based method in studying phonetics perspective and 70 % suggested that it should be included in the curriculum compared to 45 % and 20 % respectively before the experiment. Moreover, the majority of the subjects (90 %) confirmed the ability of the corpora-based approach to raise their language awareness as well as to enhance their motivation to study English phonetics though before the experiment only 11 % of the respondents considered it possible. In their answers to the question about the most useful aspect of the use of corpora data in phonetics classes, the majority of the participants highlighted availability as one of the most useful aspects as well as its data scope and data variability (60 %, 20 % and 20 % respectively), while before the experiment this question caused difficulties on the part of the respondents and they couldn’t answer the question.

Conclusion
Our project was primarily dedicated to the evaluation of the effectiveness of corpus-based method in teaching pronunciation. The results obtained during the experiment proved a corpus-based method an effective technology to be
introduced into the university academic environment for teaching foreign languages.

The second research question considered comparing the effectiveness of a corpus-based method of instruction and a traditional teacher-centered approach. The results demonstrated that a corpus-based method of instruction turned out to be more effective than a traditional teacher-centered approach. The difference in pre-test and post-test results in the experimental group proved to be statistically significant, while in the control group the results appeared statistically insignificant. In addition, there was statistically significant difference found between the post-test results from the two teaching approaches. The attained results testify that a corpus-based method of instruction happened to be more effective than a traditional teacher-centered approach in introduction the new material on assimilation and elision processes in the class of phonetics. However, we believe that one of the limitations of the study may be a relatively short instruction period during which the students were exposed to corpus-based approach in teaching phonetics (only four classes) and consider running a longitudinal research project on corpora application in phonetics in the future.

Finally, the analysis of the results from the questionnaire allowed us to answer the third research question about students’ motivation level and compare these results with the data from our preliminary study questionnaire [6]. According to the present questionnaire data, the application of corpora in the classroom had a positive impact on the students as it revived their interest and motivation in the process of learning pronunciation. It can be explained by computer-based nature and novelty of such activities, student’s exposure to ‘real’ language and situations, as well as by the participants’ low level of corpus linguistics awareness before the experiment and their realization of its benefits as a result of corpus-based classroom activities they participated in. The questionnaire data correlate with the results we obtained from our pilot project in 2014, when we examined the impact of corpus-based approach on students’ attitudes and motivation.

The study revealed the urgent problem – the insufficient development of corpora application in language teaching in Russia. The designed set of corpus-based activities proved to be one of the alternatives to the traditional ways of teaching pronunciation, which allows us to consider corpora a perspective technology to be integrated into the academic environment in Russian university context. Corpus-based classroom activities generate learner autonomy and train students to draw their own conclusions about the language use. We believe that the recognition of the corpora-based method as perspective in learning phonetics from the students’ perspective is as valuable as approving its effectiveness on the teachers’ side.

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