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## The role of problem-solving tasks in teacher training by correspondence

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### Abstract

The article states that the process of educating future teachers of English at pedagogical universities by correspondence should include problem-solving tasks which add to the development of all foreign communicative competence components. The author analyzes different approaches to classify problem-solving tasks and describes the types of the tasks which were approbated in the experiment consisting of four stages. According to the post-experimental test, the results of which were checked by the Mann-Whitney U test, problem-solving tasks prove to be effective, and consequently, the hypothesis of the research is verified. Finally, the results of the survey aimed at revealing the students' attitude to problem-solving tasks implementation adduced. The analysis of the students' responses allowed us to formulate the conclusion that a problem-solving task on its own account does not create a problem situation for a student. Thus a problem-solving task implementation must arouse a student's need in the acquired knowledge or skill. For this purpose the teacher's question or task must correspond to the student's needs. The task must also correspond to the level of the student's foreign communicative competence. Depending on this level the teacher is to vary the amount of his assistance in the process of the problem solution. The higher the level is, the less guidance is to be provided by the teacher. The function of the first problem-solving task is to motivate students to study a new topic; the system of the following tasks serves the purpose of the language acquisition.

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### Keywords

Problem-solving task, classification, communicative competence, teacher training, experiment.

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## Introduction

The need of a modern society in competent specialists causes the necessity of higher education process improvement. Federal state educational standards say that a university graduate must possess a number of competences, some of which are connected with the ability to analyze information and socially important problems, make administrative decisions in unconventional situations. Special requirements are to be met by pedagogical university graduates as the quality of school education depends on them. A future English teacher must demonstrate the C1 level of the foreign communicative competence, but not all students can achieve this level. It is especially difficult to teach English a correspondence student as such students have only three two-week sessions per an academic year, the rest of the time they are to work on their language skills by themselves. Thus the quality of the teacher-student interaction influences the quality of education.

The analysis of scientific literature and personal experience of work at university shows that the following contradictions have not been resolved yet:

- between the requirements to the level of the foreign communicative competence a future English teacher must demonstrate and the difficulty of achieving this level by correspondence students;

- between the need in competent foreign language specialists being able to advance arguments in favor of their position and the insufficiency of the means of the competence approach to foreign language teacher training;

- between the necessity to have skills to solve different problem situations in professional activity and the lack of practical educational tasks aiming at teaching students to solve personally, socially and professionally significant problems in available course books for the departments of foreign languages.

We suppose that the usage of problem-solving tasks in the process of teacher training can contribute to the solution of the problem of foreign communicative competence development.

## Main body

The structure of the foreign communicative competence has been studied by a number of scientists [Hymes, 1972; Canale, 1983; Bachman, 1990; Solovova, 2004]. All the researchers are in unison in the opinion that the foreign communicative competence is the ability to use a foreign language in various communicative situations, but the number of components and the terms vary: grammatical/linguistic, sociolinguistic/sociocultural, discourse/pragmatic, strategic/compensatory, social, cognitive.

In this research the following components are pointed out:

- linguistic (the ability to use various linguistic means and rules to solve a communicative task, the knowledge of idioms and the ability to use them in speech);

- speech (the ability to read, listen, write, speak; the skill to understand and use various expressive means to achieve one's communicative purpose);

- sociocultural (the knowledge of the native and foreign culture, the ability to analyze their cultural development experience; the ability to participate in the dialogue of cultures);

- discourse (the ability to understand and produce various types of discourses taking into consideration the rules of their construction, the ability to choose correct linguistic means to avoid ambiguity);

- strategic (the ability to use verbal and nonverbal strategies in the process of communication);

- social (the ability to interact with other participants of communication, to maintain communication, if necessary to solve the problem of misunderstanding between the participants of

communication);

-professional (the ability to use the foreign language for professional purposes, in the process of teaching English).

Thus, these components of the foreign communicative competence have been in the focus of our attention in this research, all the problem-solving tasks have been aimed at the development of all the stated above subcompetences.

There have been several researches devoted to the study of problem-solving tasks, but all scientists investigated only one aspect of their usage:

- teaching grammar [Harmer, 2007];
- teaching vocabulary [Safonova, 2001];
- teaching to read [Frank, 1995];
- teaching to listen [Schukina, 2008];
- teaching to speak [De Bono, 2004; Tan, 2009];
- teaching to write [Littlejohn, 1994; Zaharova, 2007].

The analysis, generalization and systematization of these researches data allowed us to classify all problem-solving tasks into the following types.

1. Grammatical problem-solving tasks include the following activities:

- the preview of grammatical structures in a text for reading and listening (read/listen to the text and determine what grammatical structure is used in it most frequently);
- the text study aimed at grammatical structures analysis (analyze the grammatical constructions in this text and identify their form, meaning, use in communication)
- matching (study the examples of various grammatical constructions and join the parts of the sentences taking into consideration the rules of their construction shown in examples);
- searching (analyze similar grammatical constructions and find the differences between them; find and correct grammatical errors).

2. Lexical problem-solving tasks can be based on:

- classification (classify the following vocabulary according to four criteria, define these criteria for classification);
- searching for identical lexical units in a number of the similar ones (find absolute synonyms in the list of synonyms);
- comparison (compare the following synonyms and find the differences between them);
- riddles (guess what is described in the text);
- rebuses (decode the words encoded in this rebus/puzzle).

3. Problem-solving tasks aimed at teaching receptive skills cover:

- one-text problem-solving tasks with insufficient information (answer the questions using the implied information in the text);
- many-text problem-solving tasks with insufficient information (read/listen to the texts containing various points of view on one question and say what other opinions may be expressed);
- one-text problem-solving tasks with the unknown activity implementation method (convert the text containing fact into a text expressing the author's attitude to these facts);
- one-text problem-solving tasks with unknown conditions (identify who, when and where wrote this text using the implied information);
- one-text problem-solving tasks with contradictory information (read/listen to the text containing a hypothesis and arguments supporting it; think of any other hypothesis that can be based on these

arguments and provide counter pleas);

-many-text problem-solving tasks with contradictory information (join two texts expressing different viewpoints into one text written by one author);

-many-text problem-solving tasks with surplus information (read the following sentences and select the necessary ones to create two anecdotal stories).

4. Problem-solving tasks directed at honing productive skills include:

-discussions (a consideration of a disputable question or problem in which each participant provides arguments to support his/her point of view and opposes the opposite opinion in order to achieve the purpose);

-information-gap activities (a task which supposes a lack of information between two or more people who are to find out all the information in the process of interaction to solve a problem);

-problem-solving role-plays (a task doing which students play some social roles to solve a problem);

-scenarios (a task to carry out interaction playing some roles to resolve a conflict; in a scenario as opposed to a role-play only a situation is described, and a goal is set by a teacher, students are to interpret their roles and find the ways to resolve the conflict on their own);

-simulations (a simulation is a large-scale complicated scenario maintaining interaction over a period of several episodes);

-situation reconstructions (students are given a picture which shows the consequences of an event, they are to address questions to a student-witness to reconstruct the situation);

-projects (independently planned and implemented activity in English aimed at solving a problem and consisting of three major stages: planning, carrying out a project, reviewing);

-problem-solving essays (an essay containing a problem, different variants of its solution, their detailed analysis and a conclusion);

-mazes (students are given a problem situation and two or more variants of the problem solution; they are to discuss all the offered variants and choose one; depending on their choice a new situation is given to them; students continue this activity till the end of the maze that is either a success or a failure).

Thus problem-solving tasks can be used to teach all language and speech skills and, consequently, all components of the foreign communicative competence. The majority of the mentioned above tasks serve more than one teaching goal, so it is more correct to point out not the only goal, but the dominant one.

The hypothesis that problem-solving tasks are an effective means of the correspondence students' foreign communicative competence development was experimentally verified.

The experiment was conducted with two groups of senior university correspondence students during an academic year which included 3 academic sessions and two inter-session periods. Each group was divided into two subgroups to form two experimental and two control groups. The experiment consisted of the following stages: a pre-experimental test; an educational experiment proper; an intermediate test; post-experimental test.

To check the statistical significance of the results obtained the Mann-Whitney U test was used. The first sample is the one that has higher results. The results ranking proved that the first sample is the experimental group.

The null hypothesis is that the experimental group results do not rank over the control group results. The alternative hypothesis is that the experimental group results rank over the control group results. U was determined by the formula 1:

$$U = (n_1 \times n_2) + \frac{n_x(n_x+1)}{2} - T_x \quad (1)$$

$n_1$  is the quantity of the subjects in the first sample;

$n_2$  is the quality of the subjects in the second sample;

$T_x$  is the higher rank sum;

$n_x$  is the quantity if the subjects in the sample with a higher rank sum.

Significant differences between the first and the second sample can be stated if the *empirical U* is less than *the critical U*. The critical value table shows that *the critical U* equals 31. According to the formula evaluation *the empirical U* is 30,5. Consequently, the differences are significant and the alternative hypothesis that the experimental group results rank over the control group results is accepted.

## Conclusion

At the end of the experiment the students were asked to answer the questions of the questionnaire to identify their attitude to problem-solving tasks. The survey showed that problem-solving tasks are thought to be an effective means of the foreign communicative competence development by 97 percent of students the experimental group as they stimulate their speech and mental activity. Three percent responded that problem-solving tasks are more likely to develop mental abilities and creative thinking and the absence of the latter will interfere with the process of the foreign communicative competence.

The majority, 90%, find such tasks interesting and motivating. The most popular tasks are the ones that suppose the expression of the students' personal opinion: problem-solving discussions, projects, role-plays, information-gap activities. They are aimed at speaking skills development. The fact that all the respondents prefer to do problem-solving tasks in pairs or groups demonstrates the students' aspiration for interaction.

Sixty percent reported that the most challenging tasks are connected grammar skills, while 40% referred written tasks to the most complicated ones, such as a problem-solving essay and a written discussion. These responses can be explained by the students' average level of grammar and writing skills and the fact that such tasks are time-consuming.

Ninety percent intend to use problem-solving tasks in their teaching profession. Thirty percent reported that not all problem-solving tasks are suitable for all stages of language acquisition. For example, mazes, scenarios and text tasks with insufficient or contradictory information can't be used at the classes with beginners. Such tasks are more appropriate for more advanced students.

Finally, participants were asked to add any comments about the experiment they had been participating in. The analysis of the students' responses allowed us to formulate the conclusion that a problem-solving task on its own account does not create a problem situation for a student. Thus a problem-solving task implementation must arouse a student's need in the acquired knowledge or skill. For this purpose the teacher's question or task must correspond to the student's needs. The task must also correspond to the level of the student's foreign communicative competence. Depending on this level the teacher is to vary the amount of his assistance in the process of the problem solution. The higher the level is, the less guidance is to be provided by the teacher. The function of the first problem-solving task is to motivate students to study a new topic; the system of the following tasks serves the purpose of the language acquisition.

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## Роль проблемных заданий при обучении будущих учителей иностранного языка на заочном отделении в вузе

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### Аннотация

В предлагаемой вашему вниманию научной статье обосновывается необходимость использования проблемных заданий на занятиях по практическому курсу иностранного языка при формировании всех составляющих коммуникативной компетенции у студентов – будущих преподавателей иностранного языка, обучающихся в вузе заочно. В работе проанализированы различные подходы к классификации проблемных заданий, также в статье дано описание экспериментальной работы, состоявшей из 4 этапов: предэкспериментальный срез; собственно, обучающий эксперимент; промежуточный срез; итоговый (постэкспериментальный) срез. Для более достоверной оценки различий между контрольной и экспериментальной группами по уровню сформированности у испытуемых иноязычной коммуникативной компетенции был использован статистический U-критерий Манна-Уитни.

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В заключении статьи автор приводит подробные результаты анкетирования студентов, принявших участие в этом научном исследовании.

#### **Для цитирования в научных исследованиях**

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#### **Ключевые слова**

Проблемное задание, классификация, коммуникативная компетенция, педагогическое образование, эксперимент.

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