Integration of innovative technologies for enhancing students` motivation for their future career prospects

Olga Volobuyeva[a], Victoria Subbotina[b]*

[a]*Professor, Department of Information and Telecommunication Technologies, K.I. Satpayev Kazakh National Technical University, Satpayev 22, Almaty city, 050013, Kazakhstan, 8 727 292 60 25*
[b] *Assistant Professor, Department of Languages, JSC "Kazakh-British Technical University", Tole bi 59, Almaty city, 050000, Kazakhstan, 8 727 272 33 68*

Abstract

Nowadays a foreign language is an indispensable component of students` professional teaching for meeting the challenges associated with their professional activities. The basic formation of necessary background knowledge and professional skills (competences of young specialists who are able to communicate in English professionally) are based on using didactic models and project technologies with the help of special technological tools, for instance: the study of pragmatic texts on a wide and narrow profile of students` specialization. Findings of the analysis on teaching professionally-oriented foreign language at the university, determination of pedagogical techniques and principles, and the use of project technologies in the Kazakhstani educational system helped the authors develop an effective teaching methodology that ensures a high level of students` mastery using English in their professional communicative processes. Students` motivation to study professionally-oriented foreign language is enhanced by their teamwork and a fruitful cooperation with venture enterprises of Kazakhstan. The proposed methodology on teaching a professionally-oriented foreign language (English) using IT and their applications has been tested in the "Project Management" course.
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* Corresponding author. Tel: +8-727-272-3368; fax: +8-727-272-3367,
E-mail address: victoria_07@mail.ru

1. Introduction

The relevance of the paper is the use of information technologies (IT) in teaching professionally-oriented foreign language at the universities. It is caused by insufficient analysis of the problem on using IT in the educational process. Nowadays, many students use the *Internet* sources mainly for obtaining authentic materials for their research, data analysis, surveys and questionnaires on various topics for writing course or graduation papers. However, less attention is paid to the systemic use of IT in the teaching process at the Kazakhstani universities. The fact is that a foreign language is taught at the first and second courses of engineering specialities, it is also used for data collection, analysis, processing and systematization of scientific and technical information on a definite professionally-oriented field. Nevertheless, it is necessary to use a systematic approach in a teaching process for developing students` professional competences that are required by future specialists who are able to communicate professionally in a foreign language.

The basis for the formation of professional competences are not only pragmatic texts and texts on a wide and narrow profile of a particular speciality (Klarin, 2000; Aslamova, 2002), but also the use of modern IT tools (Newton, 2006; Pinto and Slevin, 2004; Volobuyeva, 2008). In addition to it, while mastering language skills and professional competences students write abstracts, scientific papers, reports, resume/CV, summaries, business letters, and other scientific papers that are speech products. The main tools for developing students` professional skills are: Excel, Microsoft Project, PowerPoint, Paint etc. Therefore, the authors propose one of the methodologies on teaching professionally-oriented foreign language (English) with the use of IT taking into account the course "Project Management" (Gibbs and Simpson, 2004). This methodology is based on an experiential teaching and developed for students majoring in "Information Systems".

A pragmatic model of a contemporary specialist among the main professionally-oriented specific features includes the students` ability to use IT (Aslamova, 2002). Kazakhstani students possess IT skills; however, they do not have any professional communications in English with specialists in their fields. The efficiency of professionally-oriented foreign language teaching using IT will be at a high level if the teaching methodology is developed in accordance with pedagogical properties and IT functions and with the use of innovations in the educational process. In general, the use of interactive educational forms is an innovation in the educational process. There is a shift of paradigms from "education – learning" into the paradigm "education – formation", and the mechanism of its implementation is the principle: *lifelong learning.*

Didactic properties and functions of IT allow the authors to implement interactive student-centered tasks in the teaching process that are aimed at forming their professional competencies. These professional competences enable students to solve problem-oriented tasks using a foreign

experience; in addition, it helps them develop their critical thinking, creativity, and self-realization in the future.

2. Problem Statement

The relevance is the use of information technologies (IT) in teaching foreign language. It is caused by insufficient analysis of the problem on using IT in the educational process.

3. Purpose of the Study

Foreign language is an indispensable component of professional teaching for meeting the challenges associated with students` professional activities. The basic formation of necessary background knowledge is based on using didactic models and project technologies with the help of special technological tools.

4. Research Methods

A survey was carried out among students of the Kazakh University with the major on "Information Systems" (Bachelors of IT).

4.1 Overview of Approaches and Models on Interactive Teaching

Nowadays, there are various approaches and models of interactive teaching (Klarin, 2000; Warschauer, 2000): work in small groups on creative tasks that is imitation and exposure of students to real professional activities with the performance of experts` functions at various workplaces (e.g.: the functional manager, the top manager etc.). The following interactive teaching technologies are used in the "Project Management" course: project technology (an individual or collective activity) and the result of it is project, problem teaching with a detailed elaboration of decision trees, brain storming or compromises for making optimal decisions and analysis of specific problems. The concepts of student-centered education that improves students` professional communication, in particular, development of critical thinking are educational activities aimed at the development of students` reasonable and reflexive thinking that helps students generate new ideas and see new opportunities.

A high level of students` motivation to study professionally-oriented foreign language is ensured not only by using modern IT tools, but also by teamwork that is based on cooperation with the venture enterprises. Due to the use of Microsoft Project (MS Project) in class while studying the course "Project Management", instructors create new facilities for students, their involvement in the professionally-oriented situations, their communication in the information environment and the evaluation of students` desire to work in teams, their cooperation with each other and co-authorship. Moreover, project technology that forms the basis for the methodology of professionally-oriented foreign language teaching elaborated for students of engineering specialities meets their personal and professional needs and their expectations and promotes the formation of competences and professional communication in English.

Therefore, the aforementioned innovative instructive technologies are the methodology foundation proposed by authors of this paper. Indicators of effectiveness for instructive technologies are the following (Klarin, 2000; Warschauer, 2000; Aslamova, 2002; Pinto K. and Slevin D., 2004; Volobuyeva, 2010; Volobuyeva, 2011):

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– focus on the intellectual and psychological abilities of students and their motivational potential;

– the creation of an emotionally positive instruction;

– the implementation of the principle of partnership, cooperation/collaboration and dialogue between instructor and student;

– the ability to encourage students towards interactivity and co-authorship;

– the final bottom line after graduation from the University, namely the project based on MS Project.

4.2 Project Technology

An applied technology project is associated with an active students` independent study on an elaboration of a special product (a particular project). This project activity helps students to acquire background knowledge and professional skills in terms of choosing necessary strategies and planning work on the project; breakdown work into work packages with specific evaluation criteria using the critical path method for efficient project management and monitoring, its cost and schedule. It also helps students to select project stakeholders; analyse uncertainty of the project managed: identify possible risks, develop plans for responding to project risks and create strategies on decision-making in terms of risk etc. Mastering professional skills in a professionally-oriented foreign language (English) is a real prospect for students of Kazakhstani universities to take part in projects of venture enterprises.

The effectiveness of this type of project is defined by the following factors:

- problem solving is performed in an authentic language environment;
- teaching is organized in cooperation with each other;
- methodology on the project implementation is based on the integration of language and modern IT tools;
- work on the project is carried out under the supervision of instructors.

Therefore, a major role plays an experiential learning: students are engaged in a real project of venture enterprises. Experiential learning that involves 13 students and 2 instructors allowed the authors to analyse the efficiency of using project technologies in the teaching process.

Elaborating the methodology based on the students` achievements in mastering practical skills and their participation in the projects of venture enterprises helped the authors to make the following conclusions:

- the effectiveness of using modern IT tools allows the instructors to involve their motivated students in the interactive learning mode to communicate in English consistently;
- the venture project can constitute a means of verifying professional communication in a foreign language;
- students` participation in a real project creates special conditions for acquiring professional skills to create a project, its elaboration and development in a mode of cooperation and co-authorship;

- project demonstrates the students` ability to achieve a real professional communication in the English language.

The authors give some themes on the developed projects: SAP ERP Financials System Introduction, The Project on Moving to New Office, The Project on the Organization of the Advertizing Company. Due to experimental testing the methodology based on using project technology for teaching foreign language by means of modern IT tools has been confirmed. Project designed by students stimulates not only their social activity, but also develops their creative thinking, intellectual abilities and moral qualities.

In addition to it, the project could be considered as the basis for the implementation of the integrative approach to professionally-oriented learning a foreign language at the university because it combines technical (the use of modern IT tools), social and humanitarian (co-authorship, cooperation, language skills) and special (particular course "Project Management") knowledge.

5. Findings

Findings of the analysis on teaching foreign language, determination of pedagogical techniques and principles, and the use of project technologies helped the authors develop an effective teaching methodology that ensures a high level of students` mastery using English in their professional communicative processes. The proposed methodology has been tested in the "Project Management" course.

6.1 Analysis of Results on Methodology Approbation

The authors manifest the fragments of one of the student-designed projects, namely: «SAP ERP Financials System Introduction» that show not only the degree of students` mastery in the course "Project Management" but also their proficiency in using modern IT tools, particularly MS Project (Appendix, Fig.1-5), i.e. students demonstrate a high level of language proficiency and practical skills mastery.

As it is known (Newton, 2006; Volobuyeva, 2008), any project is characterized by 5 main factors: Project Scope, Project Time Management, Cost Budget, Quality and Risks. Project Risks are uncertain events or conditions that affect positively or negatively the goals of the project. Due to a particular project, students can also develop a hierarchical work breakdown structure (Appendix, Fig. 1). The performance of work packages over time is also presented in MS Project Gantt`s Chart (Diagram) with tracking (Appendix, Fig. 2). In the planning process and project implementation students need to take into account possible project risks (Appendix, Fig. 3, 4). Fig. 5 (Appendix) shows the fragment of work packages evaluation.

After validating the course, a survey was carried out among students of the Kazakh University with the major on "Information Systems" (Bachelors of IT), and the results of the questionnaire are described below. As a result, 93.7 % of respondents answered that this course "Project Management" is useful for them, 3.1 % of respondents indicated that the course is not so effective for their future career prospects and 3.2 % of students do not know whether this course is useful and efficient. Moreover, 72.9 % of students (those who noted the effectiveness of the course) reported that the course "Project Management" is essential not only for their self-development, but

also for their future professional career. 7.8% of students indicated that the course will help them in the further mastering the English language; 7 % of respondents indicated that they took this course because it was given in the curriculum, and 12.3% of students answered that this course is useful for their future professional career. It helps them to develop necessary skills for using modern IT tools.

Students were also given the following questions:
- defining the importance of the course;
- developing practical skills in the study of the course;
- identifying the effectiveness of home assignments;
- the efficiency of mastering the course "Project Management";
- the effectiveness of the project work implementation.

Table 1. The results of survey among the students with major on IT

#	Question	Choice of students (%)
1	**While mastering this course, it was rather difficult for students to:**	
	1) study the targeted vocabulary	28.1
	2) perceive a professional audio information	25.1
	3) speak on a professional topic	18.7
	4) implement a project work	15.6
	5) understand authentic texts	12.5
2	**Practical skills that students have acquired while mastering the course:**	
	1) use of new professional words in their speech	26.3
	2) speaking and making-up a project presentation	11.9
	3) reading	0
	4) students` independent study	12.3
	5) writing	12.2
	6) listening	15.8
	7) work with MS Project	21.5
3	**The most effective home assignments are the following:**	
	1) study of target vocabulary	31.3
	2) written assignments	20.6
	3) listening	12.5
	4) reading	9.8
	5) making-up project presentations using Power Point Software	10.5
	6) work with MS Project	15.3
4	**Types of project work implementation:**	
	1) teamwork	22.1
	2) individual work	21.6
	3) work with information	10.3
	4) design and structuring the presentations	9.5
	5) writing and editing	11.5
	6) work with MS Project	25.0
5	**Knowledge and skills that students have acquired while mastering the course:**	
	1) understanding and the use of an authentic information in the English Language	22.0

2) negotiations with IT specialists	18.9
3) performing on-line tasks	16.5
4) effective teamwork	16.8
5) work with MS Project	25.8

It is worth noting that the results of the survey on these questions are shown in Table 1. The results of the survey indicate that this course "Project Management" is useful for students not only for self-development, but also for their future career prospects and their successful career path. The main difficulty for students is the study of target vocabulary, mastering basic practical skills, the use of new professional terminology in a particular domain, namely "Project Management". Therefore, the most effective form of students` homework is the study and work with MS Project; their individual work on a particular project and teamwork are the most effective techniques for performing definite project tasks.

Table 2. Main challenges for students

#	Main difficulties faced by students while mastering the course	Choice of students (%)
1	Target vocabulary	31.4
2	Listening	21.9
3	Reading	10.5
4	Writing	10.5
5	Speaking	15.8
6	Work with MS Project	9.9

The following challenges were identified by students while studying this professionally-oriented course. The results of the survey are analysed in Table 2. The main challenges that students faced while mastering the course are the following: target vocabulary and listening.

Table 3. Students suggestions on using active teaching techniques

#	Active teaching techniques	Choice of students (%)
1	Use of various role-play games on professional topics	25.0
2	Making-up presentations on the themes of unique projects	25.5
3	Use of teamwork on the projects	21.5
4	Work with MS Project	29.0

Table 4. Types of activities mostly liked by students

#	Types of activities	Choice of students (%)
1	Reading	25.1
2	Project work implementation using MSProject	21.9
3	Speaking on a professional topic	21.9
4	Writing	15.6
5	Teamwork on a project	15.5

Students` suggestions on using active teaching techniques are shown in Table 3. According to respondents, the most effective methods of teaching professionally-oriented foreign language are studying the target vocabulary on a definite data domain, namely "Project

Management" and work with MS Project, making-up presentations on topics of unique world projects in the English language. Types of activities that students like the most while mastering the course are described in Table 4.

Table 5. Types of activities less liked by students

#	Types of activities	Choice of students (%)
1	Writing	18.8
2	Listening	15.6
3	Speaking on a professional topic	15.6
4	Studying target vocabulary on the course "Project Management"	15.6
5	Project work implementation using MS Project	12.5
6	Reading	12.5
7	Teamwork	9.4
8	Students` Independent Study (SIS)	0
9	Number of students that did not answer the questions	0

According to students, the most interesting assignments are reading, speaking on a professional topic and work on a particular project using MS Project. Types of activities that students liked less while mastering the course "Project Management" are described in Table 5.

Table 6. Students` proposals on course improvement

#	Attitudes of students	Choice of students (%)
1	Effectiveness of the course	21.8
2	The use of assignments on developing reading skills	13.6
3	Organization of discussions on the projects elaborated	16.6
4	Giving more assignments on listening	14.5
5	Use of teamwork on a project	11.5
6	Compiling assignments aimed at the study of target vocabulary	9.4
7	No proposals	12.6

According to students` opinions, assignments aimed at developing their practical writing skills are less liked by them. The authors of the paper have compiled the table with students` proposals on how to improve the course "Project Management" (table 6).

According to students, the course "Project Management" can be improved by means of using numerous discussions on project creation and practical assignments for acquiring their professional skills. Therefore, results on studying this course show that developed and tested technology on teaching professionally-oriented foreign language has perfectly combined technical (using IT tools), social and humanitarian (authorship, cooperation, language knowledge) and special knowledge.

6. Conclusions

As noted above, a reproductive model of teaching a foreign language is focused on the transfer of knowledge and training practical skills in the use of the language material in terms of direct

communication. Moreover, there is a certain gap between the content of foreign language instruction and the requirements of employers to the level of the language proficiency of graduates. Therefore, instructors should take into account students` personality-centered needs. The most effective personally and professionally-oriented technology on teaching foreign language is project technology that uses modern IT tools. The use of this type of technologies allows instructors to foster students` practical skills such as the ability to work with information, develop their intellectual, professional and communicative skills. In addition, students acquire their personal qualities required in their future careers:

- the ability to breakdown work to achieve a goal set;
- the ability to use new IT tools properly;
- the ability to speak a foreign language and use special background knowledge;
- interactivity and openness to dialogue/communication, collaboration/cooperation and co-authorship.

The main objectives for the creation of such projects increase students` motivation to learn a foreign language, develop their self-actualization and leadership skills maximizing the reflection and extension of communicative competences in mastering professionally-oriented foreign language. Therefore, the main characteristics of the project are student-centered orientation, their feedback, dynamic content, the rapid exchange of information, a real opportunity of students` involvement in creative processes. As the result, students develop their communicative skills.

The expected results of the aforementioned objectives are mastery of the new IT tools, understanding the importance of students` participation in the project, and developing the ability of analytical and critical attitudes towards the information obtained from electronic sources (digital libraries, databases, electronic media, thematic sites, etc.). In addition, the evidence of the proposed methodology focused on teaching foreign language in the interactive mode of working in small groups using project technology and modern IT tools was justified. It should be also noted that while describing the experiential learning, the authors conducted a survey among students that showed a significant advancement in the students` language proficiency, their mastery in the use of modern IT tools and fostering students` practical skills on making presentations. Further development of this problem can be aimed at expanding the range of using IT in the teaching process. It also helps to form students` creative and intellectual potential and foster vitality in a professional and multilingual world.

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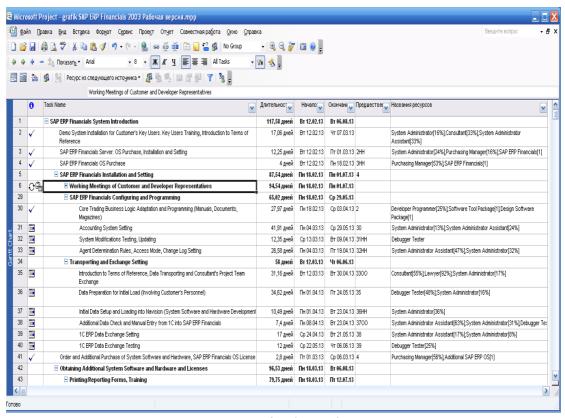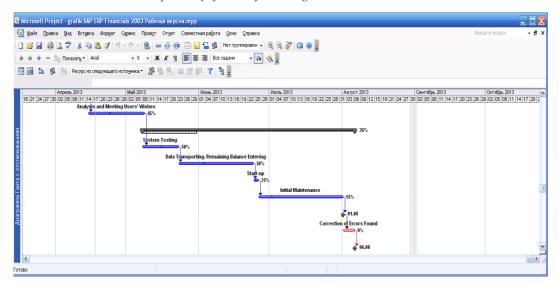
Appendix

Fig. 1. Fragment of Project Tasks
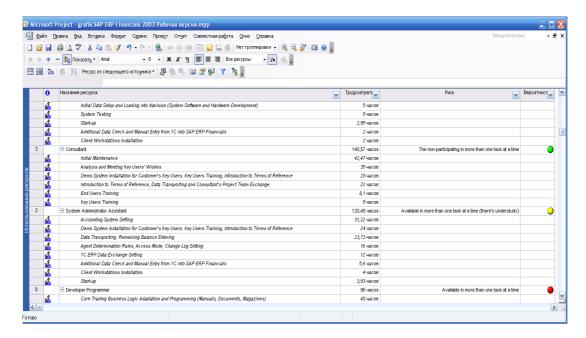
Fig. 2. Fragment of Gantt's Chart (Diagram)
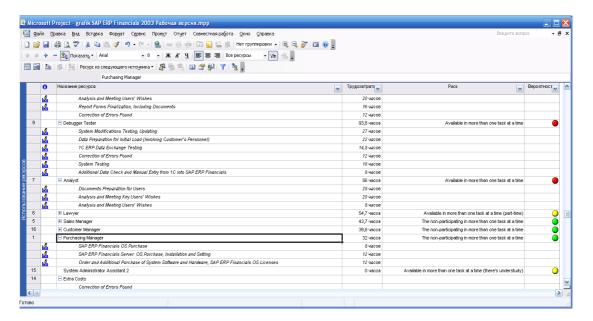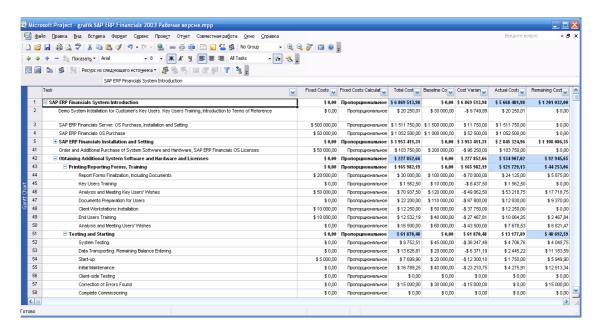

Fig. 3. Fragment of Project Risks

Fig. 4. Fragment of Project Risks

Fig. 5. Fragment of the Project Costs