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EDUCATIONAL VIDEO E-PROJECTS FOR MANAGING VOCATIONAL EDUCATION STUDENTS' SELF-STUDY

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Abstract

The primary objectives of this research are to describe the experience of implementing e-projects aimed at creating educational videos at Kalashnikov Izhevsk State Technical University while training vocational educators; to assess the efficacy of the pedagogy and to discuss our experience and give recommendations for organizing trainee-students' self-study with e-projects aimed at creating educational videos.

A set of quantitative pre- and post-surveys were administered for students in order to evaluate their learning outcomes and competencies development. Students' motivation and attitudes were evaluated through questionnaires, interviews, and discussions. An expert group appraisal method was used to define assessment components.

The experiment results showed positive dynamics in students' English and ICT competency. For most students, the level of their ICT competence development after the experiment was diagnosed as 'professional'. Concerning English skills and vocabulary acquisition, the post-survey results showed that all students demonstrated considerable improvements in reading and listening skills in their research area. Creating educational videos in English obviously contributed to the development of students' pronunciation skills as well.

Interdisciplinary e-projects aimed at creating educational video in English proved to be effective for the development of vital professional competencies of VE students. The need for setting didactic goals, developing scenarios, recording, editing, using animation and specialized programs contributes to the development of VE students' ICT competency, while searching for information, writing, editing and mouthing professionally oriented texts in English provides a sound grasp of English skills and vocabulary in the project area.

Keywords: Students' self-study, educational video, ICT, interdisciplinary e-project, ICT competency.

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1. Introduction

Arguing about the effective use of information and communication technologies (ICT) in education, many researchers support the idea of applying ICT within the frame of learner-centered and activity-based approaches. We consider interdisciplinary e-projects (Krasavina & Aiman Al Akkad, 2014; Bell, 2010) which employ project-based learning combined with ICT and cross-curriculum relationships, to be one of the most promising methods implementing the foundations of these approaches.

It's agreed that the acquisition of competencies is based on the principle of active learning (Abakumova & Malkova, 2008) and rests on the learner's experience and actions (Hutmacher, 1997). By being active learners while doing the project, students acquire vital skills and knowledge: research skills (defining and analyzing the problem, information search, monitoring, hypothesizing and drawing conclusions), teamwork, communication skills, etc. (Gitman & Timkina, 2014).

Thus, e-project can be considered as a form of the project-based learning, where ICT competency acquisition may become a secondary objective that is implied while creating the project product. For vocational educators, e-projects will be even more effective if we analyze the main problems in the vocational educator teaching practice that require ICT tools; based on this analysis, define the vocational educators ICT competency components; and develop a system of e-projects which is supposed to gradually develop and strengthen students' ICT skills that would be useful for their future career. Interdisciplinary nature of e-projects also contributes to the development of transversal skills vital for students' professional and personal growth.

2. Problem Statement

The studies on the use of ICT tools for managing students' self-study cover the following basic areas: development of educational software and electronic teaching aids with the use of ICT (Gitman & Timkina, 2014; Dmitrieva, 2001; Zainutdinova & Senina, 2009; Ivanova, 2015), implementation of information educational environment (Yermoovich & Krasnichenko, 2005; Kulikova & Poddubnaya, 2015; Muravieva, 2013), the use of Internet (Chuvilina, 2009), PBL (Novikova & Merzlikina, 2011; Osminin, 2004), multimedia projects (Ogoltsova & Starodubtseva, 2007; Polat, 1997) and others. However, most studies considered the use of ICT tools limited to a single discipline or course. Thus, the principles and conditions for ICT systematic and consistent application throughout the learning process require further discussion.

Teaching standards and other documents in the field of education make it clear that in the 21st century the teacher is expected to have ICT competency that allows him to effectively use ICT for achieving expected learning outcomes. However, the application of ICT tools for the continuous development of professional ICT competence of future vocational educators is not studied thoroughly. The problem of competency decay, when students lose the skills gained after completing a certain course also requires attention. The paper proposes a solution that implements the principles of interdisciplinarity and consistency and provides continuous development of vital professional competencies for future teachers.

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3. Research Questions

How do e-projects influence the development of students' professional competencies?

4. Purpose of the Study

The primary objectives of this research are to describe the experience of implementing e-projects aimed at creating educational videos at Kalashnikov Izhevsk State Technical University while training vocational educators; to assess the efficacy of the pedagogy and to discuss our experience and give recommendations for organizing trainee-students' self-study with e-projects aimed at creating educational videos.

The paper contributes to the theory of arranging students' self-study by means of project-based learning (PBL). It presents the e-project that was introduced as a part of Vocational Education (VE) students' self-study at Kalashnikov ISTU. The educational video e-project is aimed at developing vital professional competencies of future vocational educators, namely, English and ICT competency.

5. Research Methods

The Expert Group Appraisal method was used to define levels and components of the competencies mentioned above. A set of quantitative pre- and post-surveys were administered for students in order to evaluate their learning outcomes and competencies development. Students' motivation and attitudes were evaluated through questionnaires, interviews and discussions.

The experts (qualified teachers) were asked to define ICT skills that are the most important in their teaching practice. According to them, creating educational videos was marked as one of the most important ICT skills for future vocational educators. This is due to the rapid development of the e-learning market, the growing role of multimedia technologies in education and the popularity of distance learning courses, in which educational videos are used as essential component of learning.

Based on the results of the experts' opinion poll we developed a system of e-projects for trainee teachers, where they were supposed to gradually develop and strengthen ICT skills that would be useful for their future career, including skills related to creating educational videos. The project products that students had to create also included animations, e-courses elements, websites, presentations, etc. The projects were introduced in teaching English for Specific Purposes thus implying integration of language, content and ICT skills that promotes forming professional competency of future teachers.

Students undertook their first e-project during the 1st (winter) term of the first year of study, and the last one during the 2nd (spring) term of their last year of study. The last project product was taken into consideration while assigning the grades for their final professional qualification.

This paper describes the experience of realizing one of the e-projects into the educational process at Kalashnikov Izhevsk State Technical University for teaching English for Specific Purposes (ESP), namely the project that involves creating educational video in English on the topics related to students' major.

The participants were university students enrolled in the Vocational Education bachelor program (56 students) of first, second, third and final years of study. The e-projects research topics were chosen with regard to Vocational Education bachelor program curriculum.

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The projects were realized in a hybrid form. In-class teaching included introducing the project objectives and targets, negotiating about choosing the research area, providing extra help and guidance if necessary and presenting the project results. In addition, we held an in-class tutorial where students discussed the use of ICT in education, its advantages and controversial issues. E-learning mode was implemented in Moodle platform through an e-course, providing clear instructions for every step of the project completion, as well as plenty of resources. E-course design ensured ending every step of the project with a certain achievement that can be controlled and assessed – a presentation, a report or a test. Feedback and online consultation were provided through the Forum dedicated to this course, where students could ask any question about the project. Each e-project was designed to be completed in two to three months.

In the second term, a group of students carried out a project "Inventions and discoveries that changed our life". The project task was to create an educational film (video, animation) in English on important innovations in radio and electronics. Another group of students carried out a project with a similar project task on the topic "Molecular Physics" in the sixth term.

To define levels and components of vocational educator ICT competency the Expert Group Appraisal method was used**Error! Bookmark not defined.**. Experts defined practice-oriented description of ICT competency framework, that included existential (students' attitudes to apply learning with ICT), technical (ICT skills), organizational (organizing learning with ICT) and evaluating (ability to evaluate the use of ICT tools relevancy in teaching practice) components. Also, we defined three levels of ICT competency acquisition: basic, professional and expert levels.

6. Findings

Preliminary test results showed that most students demonstrated low-level of ICT competency in creating educational videos. Although modern students are perfectly aware of various software for creating and editing video, they do not realize the professional aspect of their use in VE.

Further experiment results showed positive dynamics in students' English and ICT competency. For most students, the level of their ICT competence development after the experiment was diagnosed as "professional" (able and ready for systematic conscious use of ICT tools for the organization of the learning process). The examples of video created by students is provided here: http://padlet.com/juliadamask/2ic50xi1rao7

The results of the assessment of the ICT competency level developed after the implementation of electronic projects are presented in Figure 1.

Concerning English skills and vocabulary acquisition, the post-survey results showed that all students demonstrated considerable improvements in reading and listening skills in their research area. Creating educational videos in English obviously contributed to the development of students' pronunciation skills as well. The results of pre- and post-survey evaluation for English competency are presented in Fig.2. The most considerable progress was recorded when completing tasks for identification and semantization of lexical units. Most students improved their skills in using professional English vocabulary in speaking and writing, using the terms correctly and without considerable phonetic and grammar errors.

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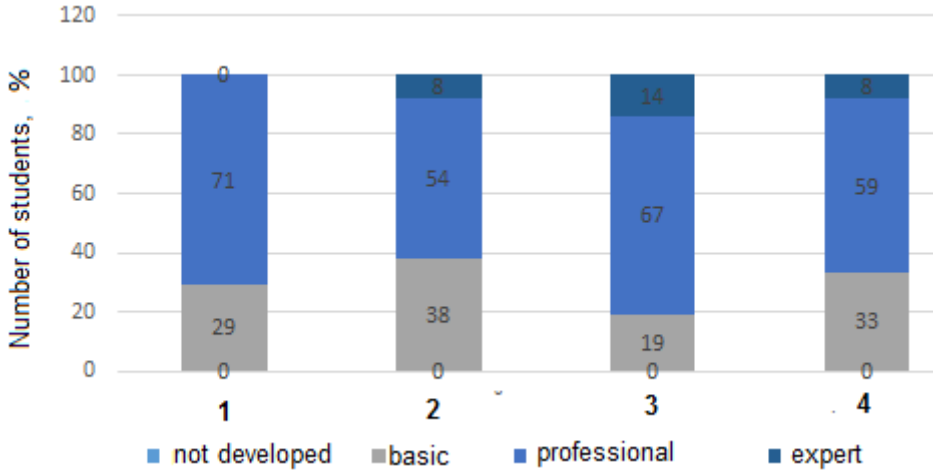

Figure 01. The results of post-survey evaluation for ICT competency acquisition related to creating educational video (1 – existential component; 2 – technical component, 3 – organizational component, 4 – evaluating component)

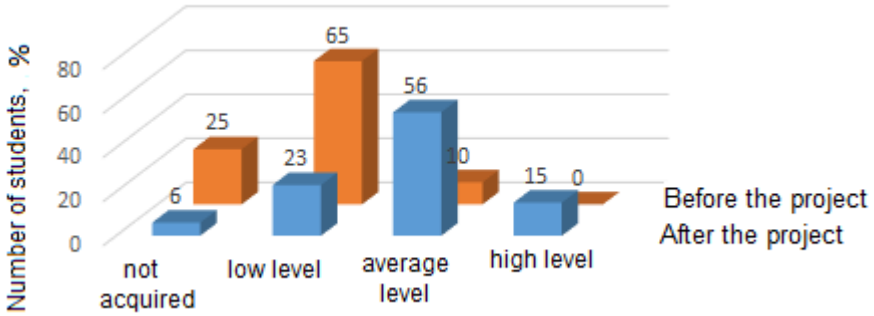

Figure 02. The results of pre- and post-survey evaluation for English competency

The pre-survey results demonstrated that although the students nowadays have excellent ICT skills and are referred as “digital natives”, the ICT competency which they acquire is a computer user ICT competency. That often means that even if they know how to use a particular ICT tool, they are often not aware about its advanced function that may be useful for their future job and have a vague idea about how, why and when it can be used in teaching practice.

7. Conclusion

Interdisciplinary e-projects aimed at creating educational video in English proved to be effective for the development of vital professional competencies of VE students. The need for setting didactic goals, developing scenarios, recording, editing, using animation and specialized programs contributes to the development of VE students’ ICT competency, and searching for information, writing, editing and mouthing professionally oriented text in English provides a sound grasp of English in the project topic.

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7.1. Recommendations

The materials presented in this article can be effectively used by university teachers who are engaged in training future vocational educators.

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