A STUDY ON STUDENTS' VIEWS ON BLENDED LEARNING ENVIRONMENT USAGE

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Abstract

The purpose of the article is to represent the opinion of our students that have been enrolled in web-based course on Ecology during their traditional face-to-face education. The analyses of the data had reflected students learning and satisfaction especially on the usage of the online materials and workshop components of blended mode of learning. The results show that students prefer integrated combination of face-to-face traditional with web based online teaching and learning activities.

Keywords: *e-learning, blended learning, self-preparation, online education, Web-supported e-learning*
ACM classification: K.3.1

1. Introduction

E-learning, which differs significantly from traditional classroom education, has become a widely acceptable and commonly used mean for education nowadays (in any types of educational organizations). Several different classifications of e-learning exist (Bates, 1995; Gonc, 2007; Ponzurick et al., 2000):

1. *Web supported* - an e-learning format that complements the traditional (face-to-face) learning process, where all participants are collocated (class sessions are held in the same place and at the same time); a Web site (i.e., portal for distance education) for the class contains course materials, assignments, goals, exercises, and short tests;
2. *Blended or mixed-mode e-learning* - this course is structured so that part of the class sessions are held in a traditional (face-to-face) setting and part are held with usage of modern ICT over internet. The mixture of face-to-face mode (traditional learning) and distance mode (e-learning) has become very popular in current educational processes. In face-to-face learning, the participant (i.e., student) establishes a rapport with the educator and gets clear instructions on how to study in the distance mode. Many universities rely on the mixed-mode of education (few class sessions, assignments are done and submitted via e-learning);
3. *Fully online e-learning format* - every class session is held in the distance mode, making face-to-face mode complementary to distance mode.

With the growing use of ICT, education in general has taken numerous forms where components of face-to-face and distance educations are blended to learner's advantage. Resulting blended education is often **a** pedagogically fine tuned mixture of both distinct education methods suitable to **a** particular learner.

The purpose of the article is to represent the opinion of our students that have been enrolled in web-based course on Ecology during their traditional face-to-face education. Descriptive statistics methods were used during data analysis process.

2. **Material and Methods**

A blended education model with especially multimedia materials and learning management system (LMS) were devised and used in Technical College of Yambol (http://tk.uni-sz.bg/edutk/). In the College activity the Moodle-VLE platform is used, which is a well known e-Learning platform in the academic community. The architecture of Moodle is compatible with the hardware and software of Technical College – Yambol (Nedeva, 2005).

Two methods were used to collect and analyze students' data.

- *First* - Records of 69 students enrolled in this program were analyzed to collect overall profile of the students and their performance.
- *Second* - A survey was conducted to identify field data related to students' satisfaction and the learning support components in blended learning model. The survey of these students was conducted with 15 closed end questions and one open ended question. A five-point scale was used, with categories rated from 1 (strongly disagree) to 5 (strongly agree). In all, 64 students responded to the survey, making **a** response rate of 92 %.

Data was analyzed and results are reported in following section.

3. **Results and Discussion**

As a result of a project work, named "*Multimedia Training Course on Ecology and Opportunities for Crossing to E-Learning*" the foundations for future distant learning took place: virtual library with didactic materials has been created – e-literatures, e-books, on-line exercises; quizzes; multimedia sources; tests; glossaries; links to other web-base on-line resources; educational movies and etc.

Survey results – student profile

During 2009 - 2010 has been conducted a survey questionnaire with 64 students. Participants were third-year students in four different specialties, 57% female and 43% male (Table 1).

Table1. *Participants – Student Profile*

Specialty	**Period**	**Participants**	**Percent**	**Male**	**Female**
Food Technology	2008	16	23%	4	12
Heat and gas supply	2008	8	12%	7	1
Automation, Information and Control Engineering	2008	15	22%	14	1
Food Technology	2009	25	36%	2	23
Other		5	7%		

Survey results – student's achievements

Students can take over the whole educational activity and work through the materials in the independent mode, including going through lectures, practicing the exercises. The feedback is provided to the student as to how well he/she scored in a particular activity (fig.1).

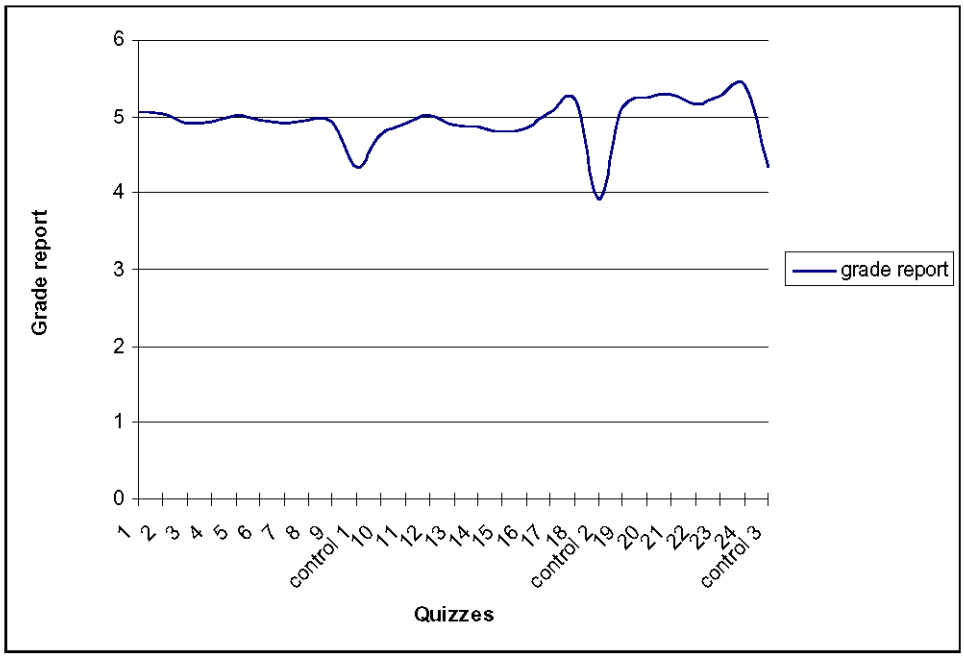

Figure1. *Grade Report – Student's Achievements*

The course consists of 24 topics; each of them is following from e-quizzes, which help students for self-preparation. The data-base of each e-test contain about 20 – 30 questions, and cover one topic, or there are about 600 question related to the learning subject. Three control tests were arranged as final exam for the students. Students take that control quizzes in the computer room with their tutor, which supply the password to enrolling the e-tests. Students also have possibilities to take that control quizzes during the study year and if they reach score higher than very good (5.00), students have been free from the final exam on the regular session. More than 75% of the students took their control quizzes with grade over the limit margin (5.00) and have no exam on the end of the year.

From the diagram we can see that on the control e-test the line that represent the grade report drop down. The reason for that can be that the control tests are time and login limited, students can enroll to that quizzes only two times, while all other tests are for self-preparation and are without these limits, as well as we can take under consideration that the higher score is reported form all attempts. Also the regular tests are in adaptive mode that helps students to correct their mistakes and help them to learn correctly the study subject.

Survey results – data information

Five inter-related components were identified by Moore (2002) for better online learning, these include:

- learning effectiveness,
- cost effectiveness,
- access,
- faculty satisfaction and
- students' satisfaction.

Learning effectiveness – In order to improve the data base of our e-learning environment and to reveal the effectiveness of the implementation of electronic lectures and quizzes we carry out monitoring. On the question are the web-based didactic materials are helpful for their self-preparation and learning the new topics, 66% from the participants gave the answer "very useful" and 33% gave "neutral" as answer. From the Grade report (fig.1) we can see that the average of score is around very good (5, 00) from the six point scale with higher grade excellent (6, 00). This result confirms that students deal well with the data base, work well on-line and the effectiveness of the learning process is on the face.

On the questions that concern the quality of the information, students answered as bellow.

The accessibility of the information: More than half of the students (91,60%) answer in range "very good" or "absolutely yes" (fig.2). Half of the information published on the web-site of e-learning, is didactic e-literature and e-books in PDF format and other half is multimedia. All the information can be downloaded from the students with the exception of quizzes that require on-line work;

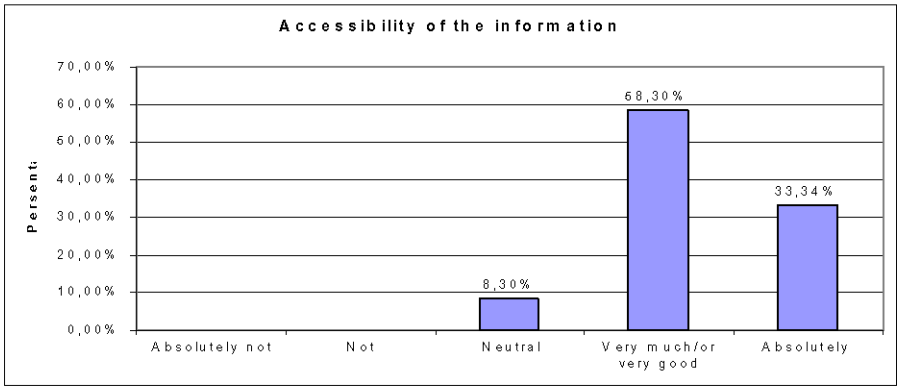

Figure 2. *Students' Point Of View about the Accessibility of the Information*

Enough information: In general all students are satisfy from the available resources of information published on the web-site of e-learning that covered the separated topic subjects. About 92% reported that the learning materials are more than enough - with rank "very good" (50,00%) and "absolutely yes" (42,00%, fig.3).

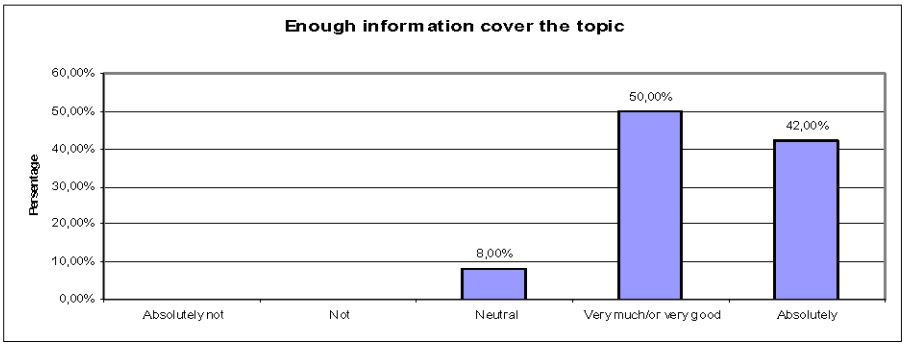

Figure 3. *Student's Opinion about the Quantity of Information That Cover the Topic*

The information is easy to be understood: Visual learning is more powerful due to the fact that individual's brain responds to stimulus provided by the environment enriched with information. When such information is perceived it triggers neuronal network in the brain so that the individual voluntarily or involuntarily responds to the stimulus to an appreciated level. ICT enriched content enables learners to carry out self imposed learning as it facilitates the students to perform reinforced learning outside their classrooms as human brain is accustomed to repetition (Navaneedhan, 2010). Nevertheless, around 16,60% from the students express difficulty to understand the material, some of the participants have not clear opinion (8,3%), and the rest (75,4%) appreciated web-based learning materials (fig.4).

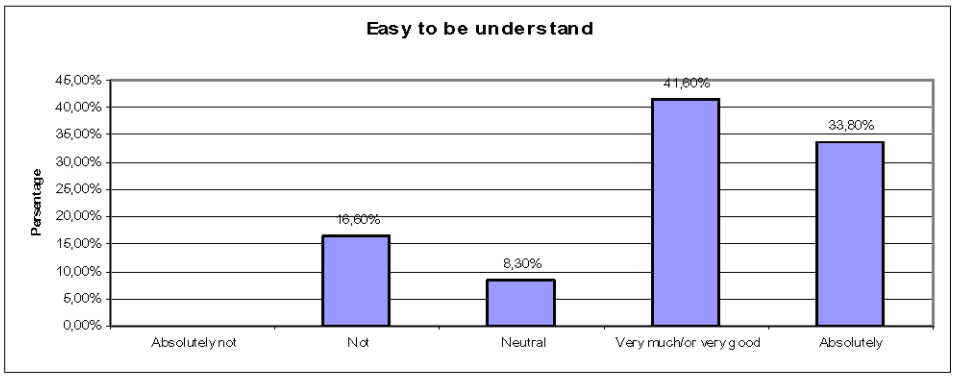

Figure 4.
Student's Opinion about How Easy the Information Can Be Understand

Required information from the students: On this point students have similar opinion (83,20%) that the information on the web-site is that from each they are need it. Only 16,60% reserve judgment (fig.5).

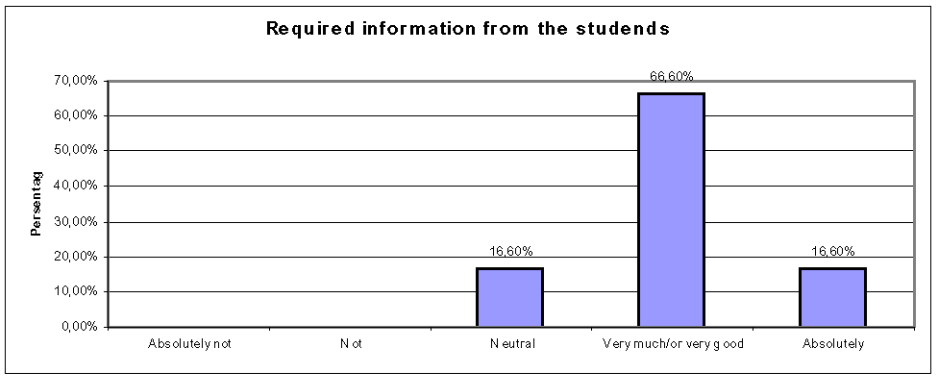

Figure 5. *Student's Opinion about the Necessity of the Information That Cover the Topic*

We can explain that results with the way that the quizzes are constructing. Each e-test followed the definite study topic and about 75% percents from the questions in the quiz are from the new topic, the rest questions are review from the related lessons that the learner already pass and practice.

The usefulness of the information: Some studies revealed that multimedia instructional CDs and workshop components were most useful to students (Sangi, 2010). Our data suggested that students have positive opinion about the usefulness of the information. Around 33% from the students have not clear idea and gave the answer "neutral", 25% are absolutely sure that the information is useful and 42% classify information as very much useful (fig.6).

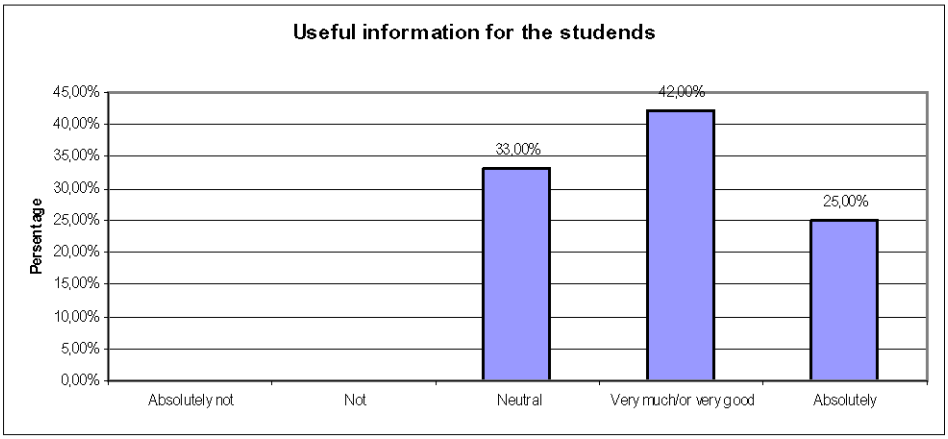

Figure 6. *Student's Opinion about the Usefulness of the Information That Cover the Topic*

The suitability of information: Students estimated the information as suitable for the purpose they have (fig.7). However, negative and neutral responses making range of 16,60%, indicated room for further improvement in on-line education.

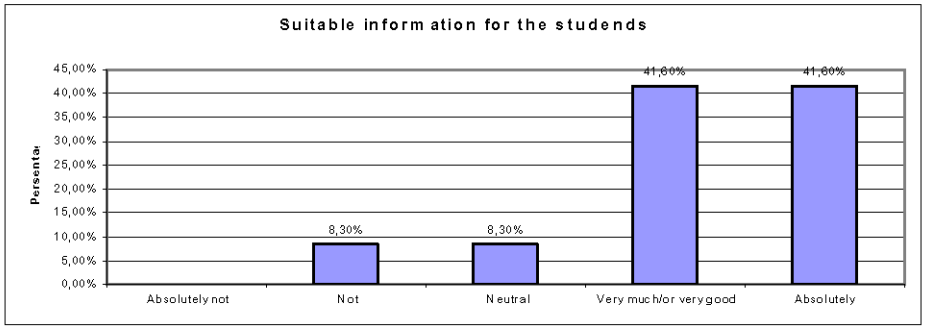

Figure 7. *Student's Opinion about the Suitability of the Information That Cover the Topic*

The students' satisfaction – The data from the survey for the qualities of the e-learning shows, that more than 67% of the inquired students are satisfy from the didactic materials available as on-line recourse and prefer combined or blended learning. These results are in synchrony with other researchers, Sangi (2010) reveal in his study that 91% students agreed or strongly agreed with blended model, students' majority (68%) were also satisfied with overall implementation of blended model of education.

When students were asked, if the implementation of further on-line distance education is relevant and if it is exists, will they prefer that model of education instead of traditional face-to-face full time education, more than 71,42% response positively (fig.8).

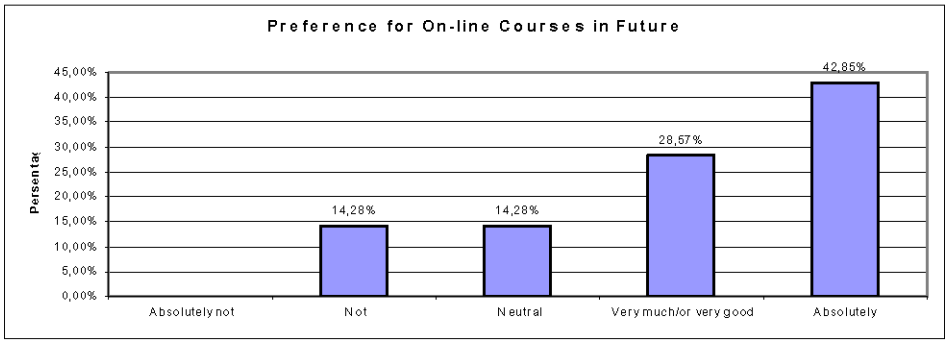

Figure 8. *Student's Preferences for On-Line Courses In Future*

4. Conclusion

The aim of the article was to conduct investigation about the opinion of students enrolled in blended mode education, during their traditional face-to-face, regular, full-time education. Most of the students appreciated the opportunity to have on-line resource for learning and self-preparation. The grade reports reveals high attitude of effectiveness for the blended model of study.

Although, this integration method increased the workload of the tutor, it is helpful in variety of ways to facilitated self-preparation of the participants and their learning process as well as their assessment of acquired knowledge's.

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