eLearning study materials and students' preferences

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***Abstract*—The main goal of this paper is to find out with the help of online questionnaire survey conducted at the Faculty of Informatics and Management of the University of Hradec Kralove, Czech Republic, what kind of eLearning study materials students prefer so that the teacher/tutor could adjust his/her online teaching materials to student's needs. In conclusion the authors emphasize importance and a unique role of interactivity and multimedia tools in designing the online study materials.**

Keywords— eLearning, interactivity, online materials, students' preferences, research, survey

I. INTRODUCTION

The educational process at universities dramatically changed in the course of the last 20 years. Most of the teaching at tertiary institutions, not only in the Czech Republic, is now supported by a number of tools which were not well-known before. Now, students have at their disposal a great number of online study materials, usually in the form of various eLearning courses or digital libraries. Students appreciate having study materials within their easy reach and being able to see and read once again the lecture notes or other materials from their face-to-face classes. It is also true that students particularly prefer to exploit study materials in their e-courses. Unfortunately, there are not many empirical studies addressing pragmatic issues such as the form of eLearning study materials.

Current trend of using Information and Communication Technologies (ICT) in different areas of modern life is also reflected in the educational process. A number of tertiary institutions exploit as their teaching support online tools, usually in the form of various eLearning courses. For example, the Faculty of Informatics and Management (FIM) of the University of Hradec Králové runs more than 240 e-courses. They are run as distance online courses or they are led as blended courses or they serve as an additional support and source of information for students after their face-to-face classes.

Many surveys confirm that students like being offered online courses because they appreciate having study materials within their easy reach and being able to see and read once again the lecture texts or other materials from their face-to-face classes. [1], [2], [3], [4], [5] It is also true that students particularly prefer to exploit study materials in their e-courses. [6] Gerlich in his study also confirms that the vast majority of page views were for course materials, a supplement for face-to-face contact on-campus. [7]

Several research studies prove that eLearning materials have positive effect on student learning. [8], [9]

These studies show that the interactivity of online materials is an important issue in their design [2], [5], [7]. As Jung claims interactivity is especially important in overcoming one of the shortcomings of fully distance education, which is a lack of interpersonal interaction. [9]

Unfortunately, there are not many studies addressing pragmatic issues such as the preferred form of eLearning study materials. Thus, the purpose of this study is to discover what kind of online study materials students prefer so that the teacher/tutor could adjust his/her online teaching materials to student's needs.

II. SURVEY FINDINGS AND RESULTS

In last year within the FIMINO project (Study Programmes of Faculty of Informatics and Management Innovation for Knowledge Economy) FIM students were asked to fill in online questionnaires in 44 subjects, which were supported online. Thanks to this research, FIM teachers could discover what kind of study materials FIM students prefer and consequently, take relevant steps for matching their eLearning materials to student's needs. As far as the survey sample was concerned, out of 2449 respondents.

As far as the survey sample was concerned, out of 2449 respondents 1867 students (76 %) were males and 558 students (23 %) were females. 24 students (1 %) did not respond to this question (see figure 1).

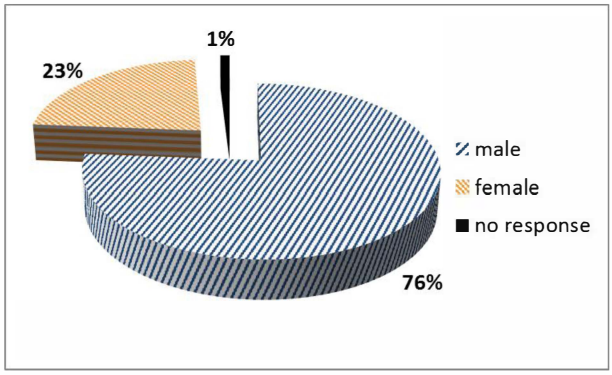

Fig. 1. Respondents' sex

As Fig. 2 shows, most of the respondents studied Applied Informatics - AI (1 277 students/ 52 %). The second biggest

group consisted of students of Information Management – IM (994 students/ 41 %). Only 83 students of Financial Management (FM), 66 students of Leisure Management and 20 students of Sport Management (SM) participated in the survey.

A vast majority of these students were full-time students (2169 respondents/ 88 %) while only 262 respondents (11 %) were part-time/distant students. Ten students (1 %) did not respond to this question (see Fig. 3 below).

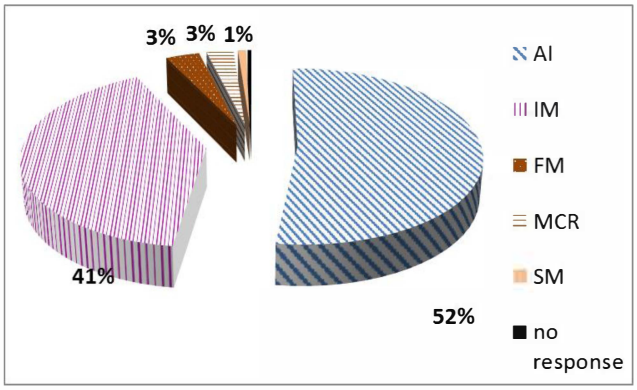

Fig. 2. Students' fields of study

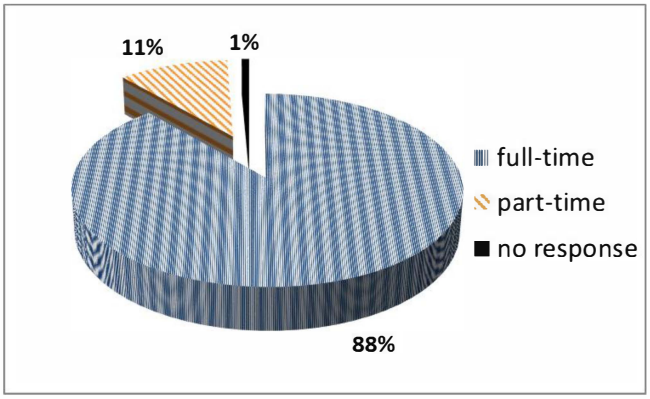

Fig. 3. Respondents' form of study

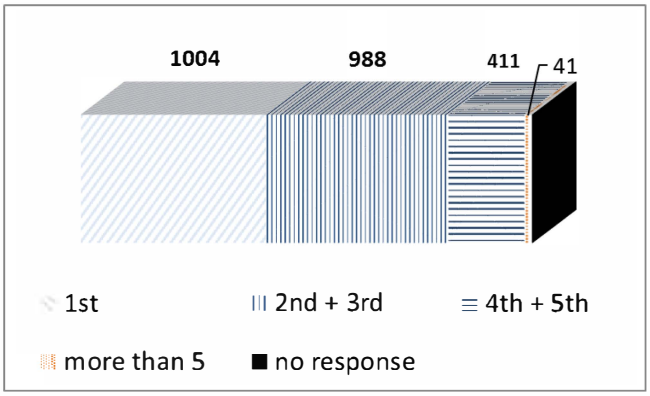

Fig. 4. Respondents' year of study

From the students' satisfaction point of view, it is important to know whether students at the time of taking this survey were the students of the first year and therefore they did not have much experience both with the university study and the online study materials as such.

Two fifths of the respondents (41%) studied in the first year. Thus, for the time being, they did not usually have any experience with eLearning. A similarly big group (40%) consisted of the students of the second and third year. 19% of the respondents were very experienced students of Magister study programmes, who studied at the university for more than four years.

In the survey students were asked the following three questions about the study materials:

1. Were you satisfied with the placement of the study materials in your e-courses?

2. Which study materials do you prefer?

3. Did you read the Study guide on e-subjects?

A. Students' satisfaction with the on-line study materials

As figure 5 demonstrates, 930 students (38 %) were pleased with the placement of the study materials. Moreover, 694 students (28 %) were fully satisfied with their placement and 659 students (27 %) had no objection to their placement. Only 115 respondents (5 %) had problems with the placement of the study materials and 29 respondents (1 %) did not like it at all. Finally, 22 students (1 %) did not respond to this question.

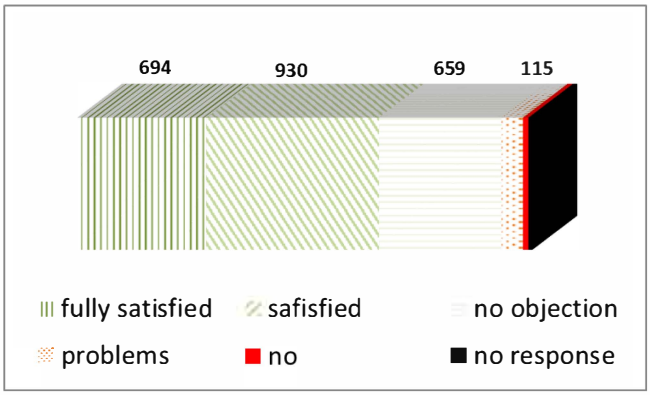

Fig. 5. Students' satisfaction with the study materials in e-courses

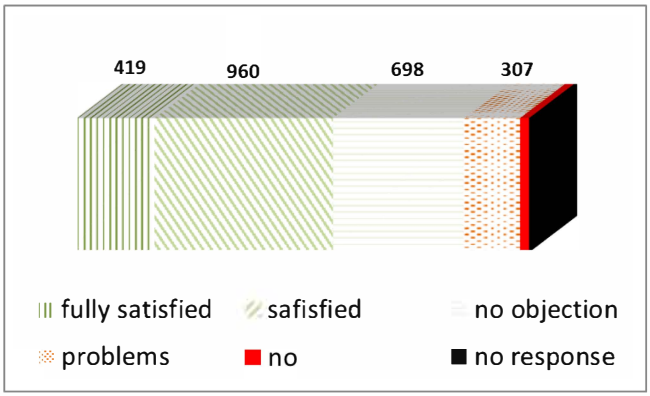

Fig. 6. Students' satisfaction with OLIVA

Surprisingly, students' satisfaction with the online materials is higher than with the virtual study environment OLIVA, which is used at the faculty. This virtual environment is based on LMS Blackboard Learn and besides the placement of the

study materials, it also serves for students' testing, submission of their assignments, for the support of their team work and discussion within their e-subjects.

960 students (39 %) were pleased with the placement of the study materials, 419 students (17 %) were fully satisfied with their placement and 698 students (29 %) had no objection to their placement. Altogether 307 respondents (13 %) had problems with the placement of the study materials and 48 respondents (2 %) did not like it at all. Finally, 17 students (1 %) did not respond to this question. (see Fig. 6)

B. Which study materials do you prefer?

When answering this question, students could tick more than one option.

Therefore, 1 266 respondents (52 %) reported that they favoured having the study materials in printed forms while most of the respondents (1 678 students/ 68 %) said that they preferred to be given lecture materials online in the form of a PowerPoint lecture. 1 307 students (53 %) responded that they would desire a text with hypertext links and pictures. Fewer respondents (626 students/ 26 %) would then want animated texts and almost the same number of respondents (705 students/ 29 %) would fancy video sequences. See Fig. 7 below.

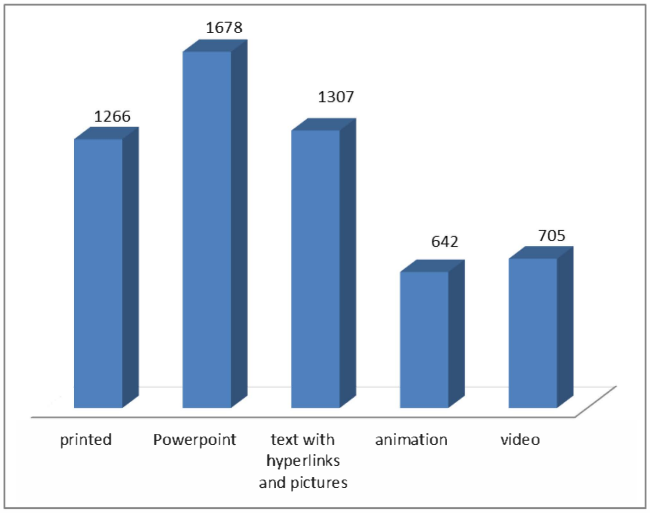

Fig. 7. Students' preferences for the study materials

C. Use of the Study guide

In order to increase students' chances to pass their subjects successfully, the so-called Study guide was created and implemented into each new e-subject.

This guide should serve as an introduction and motivation into the e-subject. Moreover, it provides information about the subject; its goal, instruction how to study, instruction about the organization of tutorials, subject requirements, or links to other sources.

Surprisingly, only 63% of students read the guide, while 1029 respondents (46%) considered the guide useful and 388 respondents (17%) read the guide but they did not consider it useful. More than one third of respondents (778 students / 35%) did not read it at all and 19 respondents (1%) thought that there had not been any guide although it was created for all e-subjects.19 respondents (1%) did not answer this question. See Fig. 8 below.

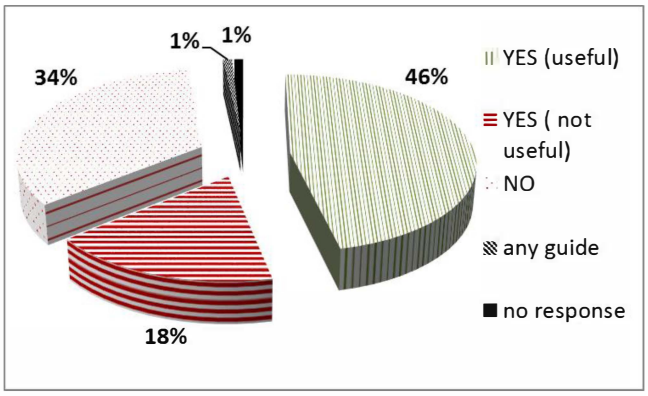

Fig. 8. Did you read the study guide of your e-subject?

III. CONCLUSION AND DISCUSION

As this research showed, a majority of respondents (2 283 students/ 93%) welcomed a possibility of having their study materials online. Besides the multiple choice of replies, the respondents were able to express in writing their own opinion. The most frequents reasons for their satisfaction with the online study materials were as follows:

- an opportunity to have an access the online study materials anywhere and at any time;
- the accessible online study materials enable to check once more all the information already given during face-to-face classes;
- time saving - students do not have to waste their time on looking for the desired information elsewhere; or
- less stress during the lecture - if students do not understand everything or they do not manage to take all notes because they can find them in the online course afterwards.

Although a half of students (1 266 respondents/ 52%) still use in their studies traditional printed materials, many more prefer to be offered various online texts with multimedia components, such as PowerPoint lectures (1 678 students/ 68 %); text with hypertext links and pictures (1 307 students/ 53 %) and animations or video sequences. O'Daniel claims that online materials appeal to all sorts of learners while text appeal to just a few. [5] It is interesting that students do not fully prefer the multimedia materials such video sequences and animation. The reason might be that the creation of these materials is quite demanding and therefore they are not represented in all e-subjects. Thus, students are not used to exploiting them. Another reason might be time consumption when working with this type of materials. In comparison with the text or PowerPoint presentation which can be understood quickly, the video or animation cannot since students would miss the whole point. Therefore, these issues can be a basis of further research.

Although the research did not prove a high preference for the multimedia materials, teachers/creators of online study materials should include multimedia components in their study materials because it is known that multimedia can concurrently affect more senses at one time. As Lindfors points out, multimedia can provide a sensory and real learning experience; it presents a greater potential for learning. [10] Sperling, Seyedmonic, Aleksic, & Meadows also emphasize their facilitation role in the organization of the online texts. [11]

At present multimedia are common teaching resources, aids or tools in teaching for the following reasons:

- they are modern/fashionable;
- they are up-to-date, they can be usually easily modified;
- they are user-friendly;
- they are relatively inexpensive;
- they are eye-catching/appealing to students;
- they are stimulating;
- simply, they are natural means of student's everyday use.

In addition, as Mbarha, Bagarukayo, Shipps, Hingorami, Stokes, et al. state, multimedia instructional materials have been recognized for enabling the understanding of complex engineering and IT decision-making situations. [12] They have been also identified as an important tool for managers and students in their efforts to connect and apply classroom theory-based learning with the analysis of real-world problems. Moreover, Mayer emphasizes that multimedia instructional materials promote deeper learning. [13], [14]

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