

Communication aspects of online courses from CARNet Pilot Project

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2. Introduction

This paper analyses the communication aspects of two online courses Basic Internet Services: The Basics of Internet and WWW (Microsoft Internet Explorer), Internet Communications – e-mail (Microsoft Outlook) (hereafter: Internet), and Development of Web animations using Macromedia Flash (hereafter: Flash). The study is based on the pilot project executed in cooperation between CARNet Educational Center Edupoint and Educational Institution Algebra.

The resources used in this paper were reports of the Algebra Institution and the psychologist Jelena Vojvoda, as well as the project documentation put together by Mirta Janeš, member of the project team.

The courses were held between July 26th and June 9th, 2004.

3. Participants and their selection

The total number of students in both courses was 53, 9 of which were CARNet's lecturers and 3 were organisation team members. Therefore, the target group for this study contains 41 students.

21 students were female and 20 were male.

The students' age was between 19 and 29, predominantly (more than 60%) between 24 and 27.

The students' occupation was equally divided between science, engineering and humanities. 38 students were undergraduate, while 3 were postgraduate.

Students were informed about the possibility to participate in these courses by phone. After a short introduction explaining the main characteristics of online courses, the final selection was made by their interest in online education.

Participation in these courses was free of charge.

4. Course versions

Each course was held in two different versions: with active and passive tutor.

The tutor's role in a course with an active tutor was active motivation of students. This included sending various e-mails containing information about the course, reminding e-mails if a student had been inactive for a longer period of time, and regular participation in forum and chat.

The tutor's role in a course with a passive tutor was passive. This means that the tutors answered all submitted questions, but did not take any initiative to communicate with the students. Groups of students in courses with passive tutor did not have either forum or chat.

Table one shows the distribution of applied students according to course and level of tutorship.

| COURSE | APPLIED |
|--|----------------|
| Basics of Internet/active tutor | 9 |
| Basics of Internet/passive tutor | 10 |
| Development of Web animations using Macromedia Flash/active tutor | 11 |
| Development of Web animations using Macromedia Flash/passive tutor | 11 |
| TOTAL | 41 |

5. Course structure

5.1. *Introduction*

After the application, the students were informed about the course structure and their obligations.

Groups with passive tutor received an introductory e-mail with a handbook containing information about the course.

Groups with active tutor were invited to an introductory lecture (duration 2 hours), where they were introduced to the basics of online education and using the course. They received the same handbook as the students from groups with passive tutor in printed form. Students mostly attended this lecture. A few students who were not able to attend the introductory lecture contacted CARNet, and collected their papers and instructions separately.

Therefore, this phase was completely satisfactory.

5.2. *Introductory test*

Before the beginning of the course, the students were obliged to take an introductory test. Despite excellent results of the introductory phase, a reasonably big dropout occurred at this stage. Table 2 shows the dropout rate of students at this stage of the project.

| COURSE | APPLIED | DID NOT TAKE THE INTRODUCTORY TEST | DROPPED OUT |
|--|---------|------------------------------------|-------------|
| Basics of Internet | 19 | 7 | 36.84 % |
| Development of Web animations using Macromedia Flash | 22 | 4 | 18.18 % |

It is interesting that the dropout rate at this stage did not depend on the level of tutorship. For this reason, this category was not separately shown in the table.

5.3. *Course duration*

The course duration was four weeks. In order to finish the course successfully, the students had to accomplish on average more than 50% of correct answers in tests. Students of the course Development of Web animations using Macromedia Flash also had to produce a satisfactory paper.

This period was marked with various technical and organisation problems, culminating with external server problems. These problems prevented us from tracking the students' activities the last nine days of course duration.

For these reasons, the existing statistics of students' activities and other quantitative results cannot be considered relevant for this study. Therefore, the scope of this paper completely turns to qualitative results.

5.4. *Final test*

Due to technical problems mentioned in the last chapter, students were not able to take the final test.

6. Discussion

For the majority of students, electronic media (in which online courses are conducted), is a new and undiscovered environment. In a case of a misunderstanding of an element of the course, there is no possibility of the tutor's direct response. Even if misunderstandings can be solved through Help tutorial, the procedure of finding the solution is often slow and boring. Therefore, communication is probably the most important key for success of an online course.

In this paper, communication was studied in three separate analysis:

- Student's adaptation to e-learning;
- Student's communication;
- Time management.

6.1. Students' adaptation to e-learning

The initial dropout rate (table 2, introductory test) points to a significant difference between students who previously had some computer skills (Flash) and students without previous knowledge (Basics of Internet). Qualitative results (from focus groups and interviews) show a similar correlation - if a student possesses some information about computer science and e-learning in general, the dropout rate is lower and the percentage of success is bigger (it must be mentioned that these conclusions are not connected with the students' satisfaction - on the contrary, students with more knowledge are generally more critical).

Therefore, the conclusion is simple: it is necessary to increase the students' knowledge about e-learning and the required shift of the learning process before the beginning of a course. As is known from pedagogy, a change of learning environment contains much deeper conceptual changes than a simple shift from paper to screen. According to Kuhn's «Structure of scientific revolutions» (1962), this shift can be named the change of learning paradigm. The Learning paradigm includes all skills which are necessary for successful following of a course, and is a much wider concept than simple facts: a person who successfully accepts a learning paradigm possesses not only knowledge about it, but also a feeling (similar to people who fluently speak their mother tongue without thinking of grammar).

It is necessary to communicate this paradigm shift on two levels:

- Factoid level, in which a student would get the knowledge required, and
- Emotional level, in which a student would understand and feel "what it is all about".

The factoid level of knowledge can be easily achieved with standard course tools. The emotional level can be achieved through independent research of a student, group communication (especially through online forums, which give a student the freedom to participate at any time), and through communication with the tutor.

Qualitative researches showed that our students did not get enough insight into the e-learning paradigm (in other words, even after finishing the course they were mostly unable to state the main characteristics of online education). At the same time, they showed quite a big level of satisfaction with the written and spoken information about the course. It is interesting to mention that the students' answers to these questions did not depend on whether they had attended the introductory lecture (groups with active tutor) or not (groups with passive tutor). Therefore, the conclusion is that whichever "tools of explaining" we used, the factoid level was satisfied, but the emotional level wasn't. Although the students groups with passive tutor did not participate in chat and the students groups with active tutor did, at this level the chat was not used at all.

The conclusion is: it is necessary to increase tutoring activities at the beginning of a course, with a strong accent on communicating the paradigm shift from standard learning to e-learning, especially on the emotional level.

6.2. Students' communication

In this study, communication was studied in four different directions:

- Student - LMS
- Tutor – LMS
- Student - tutor
- Student – student.

6.2.1. Student – LMS communication

Students' comments on communication with LMS can be divided in two groups:

- Technical issues, and
- Content issues.

The most frequent technical problems were:

- Slow opening of seminar pages;
- Bugs of course success management tools;
- Problems with breaking of voice due to a slow connection;
- Inability to reach chat.

When such problems occurred, the students were instructed to ask the separate technical service for help. But practise showed completely different results: students faced with technical problems predominantly tried to fix these problems themselves. The second biggest percentage of students asked the tutor for help, and the smallest percentage asked help from the technical service.

This shows that the concept of a separate technical support in an online course is inefficient, and that educating tutors for giving technical assistance would be a much better solution.

The most frequent negative comments on the content were:

- The course concept itself, which accepts only one solution as correct (For instance, using shortcuts in tests is considered a wrong answer although it is perfectly acceptable in reality);
- Slow passing through theory (the voice leading through theoretical chapters is slow, and students were mostly bored waiting for the next page);
- Student's inability to skip boring/slow parts of the lesson;
- Strict leadership throughout the course;
- Inability to skip chapters.

The students' level of agreement on slowness, inability to skip boring parts, accepting only one solution as correct and strict leadership was extremely high. Therefore, the offered course concept was found inadequate for the target group of CARNet users. Opinions about the voice are divided: some students found it excellent, some extremely bad and some were indifferent. It is obvious that these answers depend mostly on personal taste. Nevertheless, students mostly agree that the voice is too monotonous, and this is the only auditive element that should be improved.

The inability to skip chapters is an extremely interesting issue. Students were actually allowed to skip them, but a reasonably high percentage did not notice this possibility and therefore completely ignored it! This fact shows that the students were not able to single out the important from unimportant information in the introductory lesson and course materials, or in other words that they did not understand the course concept at all. This problem must be solved with a more intensive activity of the tutor (especially at the beginning of the course), as well as more adequate graphic design.

6.2.2. Tutor – LMS communication

Tutors were mostly satisfied with the technical and visual elements of «their» part of LMS (invisible for students). However, they had serious objections to the administrative tools

offered, which were not detailed enough to successfully keep track of students' work and give the appropriate feedback.

This part of the course should undoubtedly be improved and made more detailed, according to the tutors' requests. It would also be highly recommendable to include experts in online education methods in the process of defining these parameters and strategies of following students' work in general.

6.2.3. Student – tutor communication

The students' idea of a tutor is generally very positive, and mostly connected with two notions: help and expert. Even after the finishing the course, they still did not know the difference between an online and a classic tutor. Therefore, it is recommended to explain them the tutor's role more precisely from the beginning.

Students were mostly satisfied with their tutors, but when asked to describe a perfect tutor they strongly separated into two groups. The first group wants an inactive tutor, who helps only in case of need. The second group wants a more active tutor, who is not only helpful in solving problems but also motivating and close to all phases of studying. This division can be partially explained with the following comments: students mostly agree that the tutor practically has no role in these online courses. In a case of designing courses within a different concept, the tutor's role would also change accordingly.

The author of this paper is strongly convinced that the course concept should be more oriented towards communication with the tutor, because it would give much less room for misunderstandings and therefore improve the quality of the course.

6.2.4. Student-student communication

The possibility for student – student communication was given only to the groups with active tutor, and showed extremely poor results. During the course duration only one student tried to participate in chat, and the forum recorded a total of 26 messages. The number of forum visits was considerably bigger, and showed that the students were interested in the forum but had no motivation to participate.

These results can be easily explained with the course concept. However, such lack of communication is one of the main reasons for the students' lack of understanding of basic elements of e-learning.

The conclusion is that the course concept should be more oriented towards communication and discussion.

6.3. Time management

One of the most important tools of good communication is time management. Online courses have two different durations:

- Duration of the whole course (i.e. how many days the course lasts and how many work hours per week it requires); and
- Average duration of a session.

The duration of analysed courses was 20 days. Average student finished it in 2.5-4 work hours. This means that he/she was working approximately one hour per week.

Such time management is extremely inefficient for few reasons, but in communication science only two are important. The first one is the requirement that a student must feel comfortable and safe in learning environment. Working between half to one hour per week, a student is even not able to get used to it. Another reason, even more important than the previous, is

motivation. Because of such time distribution, students can always think that they can do the lesson tomorrow. And in the reality, it is true!

The conclusion is the following: Time management applied to analysed courses is inadequate and inefficient. It is probably highly correlated with dropout rate during the course, but such analyses were not done and it is very difficult to draw conclusions without precise data.

The course duration should be designed:

- Long enough that each student has a possibility to finish the course without stress, but short enough to motivate;
- Long enough to give as much knowledge as possible without tiredness and boredom (during one session).

Again, it is very important to stress the importance of knowing the target population. Previous researches made in corporate environment showed that average time for these participants was double. Their work obligations are also much more extensive than the students', and offered time management obviously suits them much better.

7. On communication in general

There are two levels of communication, which must be discussed separately:

- The course concept, and
- The realisation of the course concept.

The course concept offered in the courses analysed was found inadequate for the student population. All conducted researches proved that this population needs more motivation, more communication, and a less formal, but more strict approach. Researches on other populations made by Algebra show that these courses achieve significantly better results in a corporate surrounding. Therefore, it is highly important to apply the results of this research only to the target population, i.e. students, and not to the quality of courses in general.

As for the realisation, these courses proved satisfactory. There were a few big communication mistakes (for instance, failure in communicating the ability to skip chapters) but they are to be considered as beginners' mistakes that are easy to fix through this and similar researches. Problems of slowness depend on the target group (it is to be expected that students need a more dynamic course than corporate customers), so they cannot be interpreted generally.

The analysed courses have a big technical and organisational drawback: they are not checked for grammar mistakes and misspelling. The author strongly recommends that a text going into a course should pass all phases as printed literature (for instance, a book). According to Tony Bates ("Managing Technological Change", 1999), a course should not become public before passing all these phases.

8. Conclusion

The analysed online courses showed great e-learning potentials, but also proved the existence of extreme difficulties in organising such education. The biggest difference between classic and online courses lies exactly in communication. Therefore, improving it becomes the central problem of online education!

One of the first questions in all communication projects is «Whom would you like to speak to?» This research, conducted on courses designed for corporate customers applied to a student population, showed that online courses must be separately developed for each target group.

Online courses for students should:

- Be more oriented towards communication in all directions (student-tutor, student-student);
- Be more vivid, dynamic and intensive (less monotonous voice, faster work, more work hours per week);
- Be more oriented to understanding than to reproduction (LMS should accept all correct answers, not only one-way thinking);
- Give tutors more possibilities of following students' activities.

During the course students should learn much more about e-learning in general, and about the paradigm shift from classic to online studying. Only with a deeper understanding of the basic concepts will a student be able to get the maximum out of the knowledge offered. Special stress should be put on these concepts at the beginning of a course, but it should not be neglected until its end.

Technical assistance should definitely be offered through tutors instead of separating it.

Special attention must be put on design, bugs, grammar and misspelling. Online courses should pass all control phases as printed literature.