

**TEAMWORK IN RELATION TO QUALITY OF E-LEARNING:
BUSINESS EDUCATION CONTEXT**

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Abstract

This paper describes several models of teamwork used in business curricula at Zagreb School of Economics and Management (ZSEM) in Croatia. Since its foundation in 2002, ZSEM has been implementing best academic practices for quality assurance. This is done both in terms of integrating ICT in teaching and learning, as well as applying contemporary methods of teaching such as group projects and teamwork. The result is so-called hybrid model of education which combines classroom teaching with intensive e-learning. The focus of research is on the relationship between different models of teamwork and the overall quality of education in the academic year 2009/2010. Special emphasis is given to the correlation between teamwork and students' satisfaction. Besides developing the team skills, the role of teamwork in business education is seen as facilitator for the challenges posed by innovation and communication in the global economy. The study examines whether application of teamwork consequently raises the quality of e-learning.

Key words: teamwork, e-learning, quality assurance

Topic: Management education, training and development

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1. INTRODUCTION

“While the globalizing force in Globalization 1.0 was countries globalizing and the dynamic force in Globalization 2.0 was companies globalizing, the dynamic force in Globalization 3.0...is small groups globalizing.”

Thomas Friedman. “It’s a Flat World, After All,” *New York Times*, April 3, 2005.

The role of teams is clearly expressed in the fact that organizations today are facing challenges never experienced before. The concept of ‘distributed leadership’ is increasingly becoming a response to the rapid pulse of market changes and global crisis in the world plagued by complex problems such as poverty, political violence and global warming. The solution of such problems can be only found when people from diverse sectors like business, government and NGOs work together. Also, dramatic changes in the organizational life stemming from innovation-driven competition demand that teamwork and leadership are distributed across many players, both within and across organizations, up and down the hierarchy (Ancona, 2007).

As a pedagogical tool, teamwork and learning through cooperative efforts represents a useful educational tool. It is essential for creating learning environments that are supportive for students. Furthermore, unlike traditional transmission methods of teaching that help students develop their knowledge base, teamwork places particular emphasis on active learning and application of knowledge with projects, case studies, problem-solving exercises etc. Such different models of teamwork provide various opportunities for experiential learning, designed to develop better understanding of external contexts which are essential for organizational effectiveness.

The inclusion of teamwork as a learning strategy in business education has multiple benefits. Involving students in collaborative projects helps them to recognise, value and capitalise on the strengths of other people in interactive business situations. Also, it helps their understanding and experience with cooperative group processes by thus providing them with essential team skills suitable for different types of employment. As crucial stakeholders in higher education, prospective employers continue to demand graduates who are experienced in team work. For that reason business schools have to ensure that students are exposed to the team experience in their classroom environment.

In order to support communication, collaboration and teamwork processes, ZSEM courses combine classroom teamwork with online communication systems teamwork activities. Through team assignments that require critical and creative use of electronic tools and information, students improve their understanding of the professional, industrial and social contexts and prepare themselves to participate in networks and work in teams on a local, national and international basis.

1.1. E-learning at ZSEM

Besides intensive e-learning, ZSEM uses so-called hybrid model of education in which all the courses combine e-learning with traditional teaching approach. ZSEM is the leading higher education institution in Croatia which systematically uses e-learning (Aleksic-Maslac et al., 2006) and that means the following:

- It is mandatory for all the lecturers and all the students to use E-learning. Each class has to exist in an e-learning format and it is the duty of all the professors to continuously improve the quality and the scope of e-learning integration.

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- All the courses use the same Learning Management System (LMS), in this case that is WebCT or Blackboard Learning System. This enables both students and web designers to use one single approach in accessing the available online tools.

In order to monitor and measure the quality of more developed e-learning courses, an e-learning committee at ZSEM was formed. This team developed 11 standards that measure the quality of e-learning courses. Those standards may be categorized into three groupings: static, dynamic and administrative standards (Aleksic-Maslac et al., 2008). Static standards are connected with the basic elements of the e-learning course such as Syllabus, lectures, web layout and design. These elements are not part of the communication process among students and professors.

Unlike static, dynamic standards are related to the continuous communication between the students and the professor. Discussion boards, e-mail, chat, calendar and online tests are form dynamic standards. They are especially important for communicating news and information because when students log on, they have an icon indicating a new post in a certain course. Besides standard linear approach through the homepage, this enables matrix access through hyperlinks (Toth, 2008). Administrative standards involve managing the student database and they form 10% of the final grade for each course evaluated by ZSEM's e-learning committee. It is important to note here that in students' LMS system evaluations students themselves do not perceive the existence nor functionality of this element so that the school's e-learning committee's grades are lower than students' grades. However, there is a correlation between students' evaluation and administrative standards. Professors that have continuous communication with students and are more active on WebCT typically show a better database maintenance (Njavro et. al., 2006).

2. TEAMWORK MODELS

The following text describes several teamwork models currently used at ZSEM – cases, projects, presentations, weblab and video/poster. The usage of these models creates a variety of learning environments that require students to work in different ways in different contexts.

2.1 Teamwork Model Case study

Teamwork model based on case study relates theory to simulated or real-life practice. It is organized around debates on contemporary professional issues and is exercised through case analysis and construction of arguments and counter-arguments based on different perspectives. Students are usually divided into small groups of 4 to 6 members. Each team presents their case analysis to the rest of the class. Some courses develop lively classroom debates which may be extended online (Aleksic-Maslac, 2009). Although the students may encounter case analysis in the early stages of their program, cases become predominant in the last two years of undergraduate studies at ZSEM.

2.2 Teamwork Model Project

Projects usually represent the final assignment in a course because their purpose is to integrate course materials. The goal of projects such as „Implementing ERP system in the firm“, marketing plan development, launching web business etc. is to link course materials into a practical application. In most of the cases, students have a month or more to finish the project. During that time project manager is selected, students are working on weekly reports while

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the end of the project is marked by a submission of all the documentation and presentation of the project. Some projects are done in MS Project. Working on projects is beneficial for students because it helps the development of critical thinking skills and its practical dimension represents a good preparation for the real business setting. Some projects have surpassed the course framework and have grown into a new form. For instance, the best projects from Management Information Systems course (MIS) have been presented in front of students, professors and field experts at the *First student MIS* held at ZSEM (Zagreb, December, 7th) . It is expected that such good practice will be followed by other courses as well.

2.3 Teamwork Model Presentation

Although presentation is a part of each project, some courses have group presentations that introduce the research results such as interviews about consumer behavior or the like. Also, presentations are regularly part of both projects and cases.

2.4 Teamwork Model WebLab

Weblab is a teamwork project used by MIS and Sociology courses at ZSEM. Sociology Weblab is based on a real life socio-economic topic. Selected topics follow the course content and are assigned to teams at the beginning of the semester. Each team gets its own WebCT platform to create and upload their project. The goal of weblab project is to improve students' teamwork and computer literacy skills, as well as to develop deeper understanding on the chosen socio-economic issue. Since each platform also serves as a team discussion forum set up for each team to facilitate sharing of the ideas and commenting on the issues, usage of weblab platform helps students improve their communication and organization skills. Projects consist of three parts - theoretical work, field work and the research findings analysis in the form of a project report. At the end of the semester all three parts are uploaded on the WebCT team online platform and available for evaluation and comments by other teams' members.

Since they are an effective communication tool that 'facilitate the development of communities of inquiry online' (Aleksic-Maslac et. al., 2009), online discussions are very important part of every e-learning system (Garrison et. al., 2001; Meyer, 2004). In ZSEM's system for measuring the quality of developed e-learning systems they fall under the category of so-called dynamic standards (D3). Certain courses have very elaborate discussions, and this work examines closed online discussions for teams with several members. Within LMS system there is possibility to form team platforms in which each team works together exchanging documents, having discussions, organizing the work together etc. The authors of the article „Student Learning Contribution through E-learning Dimension within the course Management Information Systems“ have showed that there is a significant correlation between the student activity in closed online discussion group and their final grade (Aleksic-Maslac et al. 2010). Students motivated to spend more time participating in online discussion with their team typically have better overall results and complete the course with highest grades.

2.5 Teamwork Video/Poster

Video/poster teamwork is a Sociology course project in which each team prepares an instructive and creative video or poster that portrays one of the sociology key terms. The goal of this project is to explore the foundations of sociological discipline in an innovative and

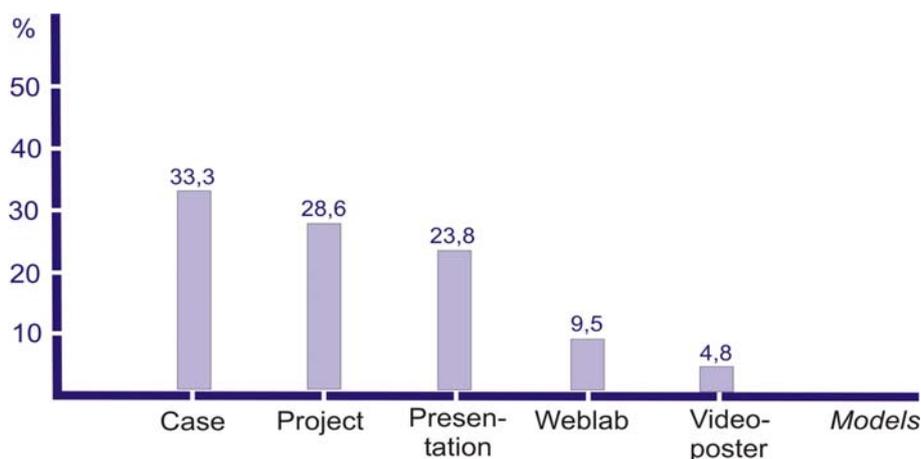
interesting way. In addition to developing presentation skills, students work on improving conceptualization and creative thinking.

All projects are presented during the class meetings and are uploaded on the course homepage. After presenting the project, each team has to guide a constructive dialogue with the rest of the class. Depending on the topic and the presentation quality of the video or poster, the class dialogues are sometime extended online, in general online discussion forum.

3. RESULTS

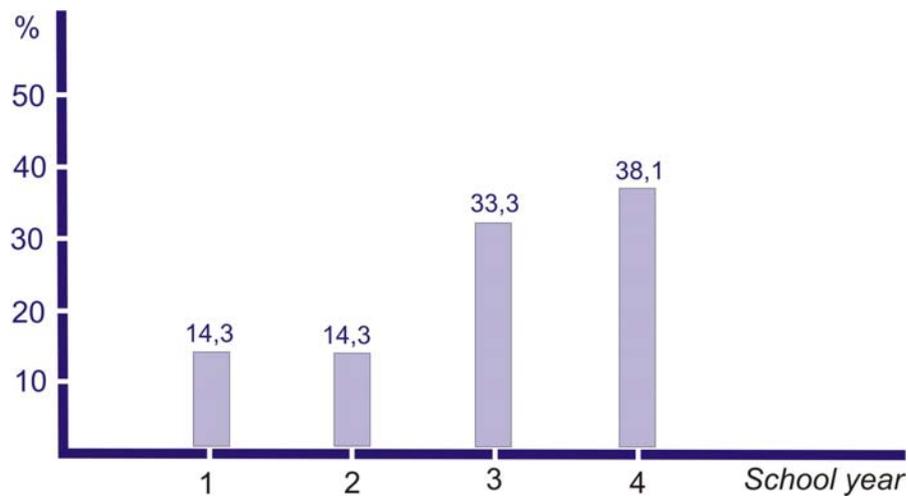
Table 1 shows distribution of five teamwork models used at ZSEM. Only those teamwork models used in regular undergraduate courses are analyzed here. ZSEM's organizing principle expressed in its mission directly supports 'implementation of ICT as an internationalization tool' (Magzan et al., 2009). However, the analysis done for the purpose of this study suggests that there is a preference towards classic methods of teamwork such as cases (33,3%), projects (28,6%) and presentations (23,8%). Only 9,5% of teamwork is done in the form of weblab and 4,8% as a video/poster.

Figure 1: Distribution of different models of teamwork at ZSEM



It is interesting to observe the distribution of teamwork throughout student years. Thanks to the courses Sociology and Information and Communication Technologies, students encounter three different models of teamwork already in the first semester. This makes up 14,3% of their total teamwork experience. The second year keeps the same percentage although the students encounter another two models of teamwork. Third and fourth year hold as much as 71,4% of all teamwork which makes sense since the first two years are marked by the basic courses such as Mathematics which are done in traditional teaching setting combined with the use of new technology.

Figure 2: Distribution of teamwork through student year



3.1 Hypothesis

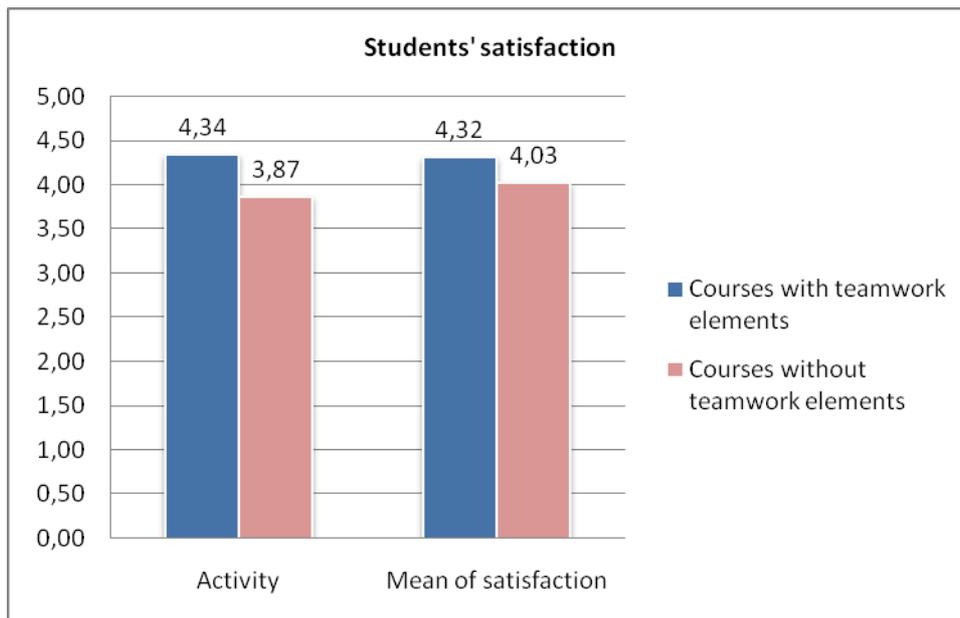
In order to analyze the influence of the teamwork to the quality of education, three hypothesis will be examined:

1. Students show more satisfaction with the courses that use some of the teamwork models.
2. Courses that use some of the teamwork models typically have better grades in the evaluation of the quality of e-learning integration.
3. Students are typically more motivated to actively participate in courses that use the elements of teamwork which results in achieving better final grades.

3.1.1. Hypothesis 1 – Students' satisfaction

At the end of each semester, ZSEM evaluates student's general satisfaction with studying, as well as their satisfaction with particular courses, professors and assistants. Surveys are done in online form by using LMS system which facilitates the process of statistical analysis and enables usage of new data for further analysis. Online surveys are active for three weeks, and the access to them is anonymous. LMS system registers that particular student has filled out the questionnaire, but the answers are not linked to a particular student. According to Njavro & etc. (Njavro, 2006) students that have higher frequency of the access to the e-learning course in WebCT format are usually more satisfied with that course. Figure 3 shows comparison of student's satisfaction in courses that use the elements of teamwork with courses that do not use such elements.

Figure 3: Teamwork – Students' satisfaction

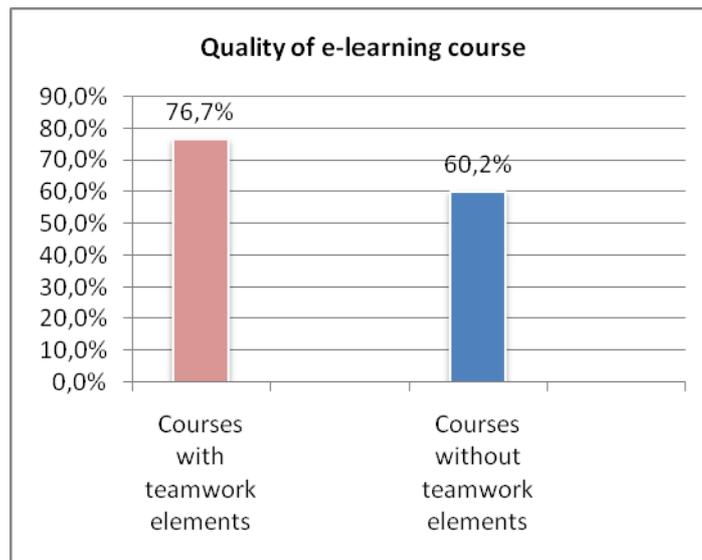


Mean of students' satisfaction in courses that use the elements of teamwork is 4,32 on the grade scale from 0 to 5, while the courses that do not use teamwork elements have 4,03 score. The difference is even greater if students' satisfaction is analyzed according to weather professors are encouraging students' active participation in the classroom (see Activity bar in the figure 3). If this is taken into consideration, students' satisfaction is higher in courses that use some of the teamwork models.

3.1.2 Hypothesis 2 – The quality of e-learning course

In order to measure the quality of e-learning integration, school's e-learning committee uses 11 standards divided into three groups: static, dynamic i administrative. Static standards are those related to initiation of an e-learning system (such as Syllabus, lectures, exerices, cases, design etc.) and are continually upgraded. Dynamic standards are those related to the communication between the students and professor such as discussion, e-mail, web calendar and online quiz. Administrative standards are related with continous updating of students database. (Aleksic-Maslac et al., 2008). Figure 4 shows comparison of the measured quality of e-learning in courses that use some of the teamwork models and those that do not use any.

Figure 4: Teamwork – E-learning course quality

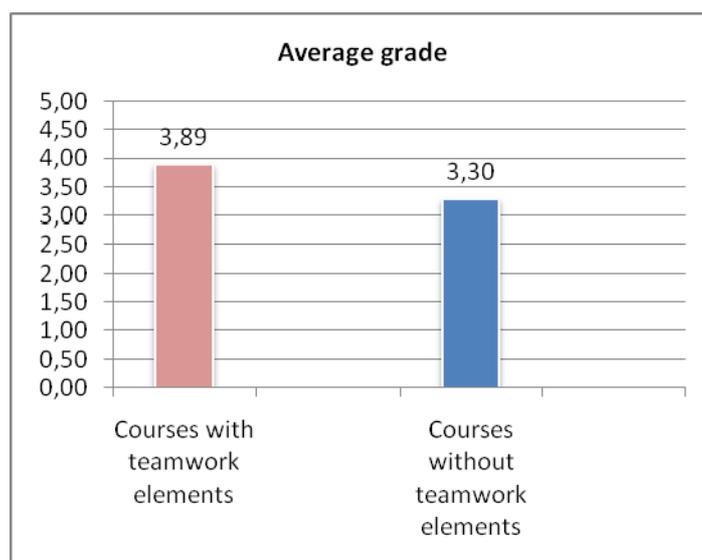


Courses that use some of the teamwork models have 16% better grade than courses that do not use any. The scale from 1-100 is used. The analysis suggests that professors which are more motivated to develop an interesting e-learning content are typically more motivated to use modern methods in education such as the teamwork.

3.1.3 Hypothesis 3 – Average grade

Although teamwork typically forms 5 to 20% of the final grade, this research suggests that average grade in courses that use some of the teamwork models is half a grade higher than grade in courses that do not use any teamwork model. (Figure 5)

Figure 5: Teamwork – Average grade



4. CONCLUSION

Since effective team work is increasingly becoming a staple of successful organizations in the 21st century, it is crucial that teachers establish appropriate teaching strategies that facilitate teamwork. ZSEM uses several types of teamwork in its curriculum. By supporting students and facilitating team work in online learning as well as through the use of this methodology in the classroom, future business graduates increase their readiness to succeed in their professional lives. Besides significant contribution of virtual teams to active learning in online courses, the usage of teamwork models at ZSEM suggests that the use of some type of teamwork increases both students' satisfaction and the effectiveness of online learning. The research done for the purpose of this study reveals a correlation between motivation and teamwork; students tend to be more motivated to actively participate in courses that use teamwork elements. These students are typically achieving better final grades as a result. Such findings suggest that there is a close relationship between the usage of team work and overall course performance. It is important to note in the conclusion that the research on the team work aspects in the process of both classroom and online learning calls for further investigation on many fronts. This study attempts to point out the role and responsibility of teachers in finding and utilizing the appropriate models of teamwork in order to ensure both learning environments that are supportive for students, but also to respond to the need for teamwork skills expressed by employers as crucial stakeholders in higher education.

On a larger scale, the implications of this research in wider business context is to point out that business schools in today's global and innovation-driven world where the value of teamwork is increasingly growing, have to continually improve and measure the quality of teamwork models offered in their curriculum. The power of teamwork in terms of raising the level of sustainable thinking and offering creative solutions is indisputable in today's world facing complex and challenging problems. Issues such as social inequality, poverty and environmental deterioration demand collaboration and collective action of people working together across sectors and organizations. In the business context, teams are valuable for creating the high-performance organizations, and in the wider social context, they carry a large potential to bring change. To conclude, it is appropriate to quote the words of a famous American anthropologist Margaret Mead who once said: "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has."

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