

Designing Virtual Team Cooperation for Educational Consultancy Projects

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Abstract: We develop an educational course for ICT consultancy that heavily relies on virtual team cooperation. As a theoretical basis, we have chosen the genre-based approach to describe the key communication patterns. These genres are matched with a proposal of media that should be used in the given situation. Following a Design Science approach, we posit the utility of our concept. This will be validated in extensive tests during the pilot project.

Keywords: Virtual team collaboration, media choice, consultancy, education.

1 Introduction

Today, many people use naturally modern ICT to communicate, coordinate and cooperate with people they do not meet at any occasion. For them it seems to be quite natural to contact people by means of different computer applications instead of meeting them personally. On the level of society, we experience a trend to de-centralization and globalization of work processes. Many organizations have responded to their changing environments, by introducing the option to work in virtual teams [9], in which it is possible to collaborate with ICT devices [7]. For instance, a survey conducted among 376 business managers from different branches in Germany revealed that about 20% of the managers worked predominantly as a member of a virtual team, and about 40% temporarily [1].

The challenge of this development for educational institutions like universities is twofold. First, students live in different places and are involved in different projects beside their studies like working or leisure time activities. Thus, it is hard to set up courses where it is required that all participants meet regularly at fixed meetings. Second, students should be trained for their future work life where it might be expected from them that they will be able to participate in virtual teams. Given this twofold challenge, there is some need for educational institutions to develop courses that train students to use modern ICT applications and effectively employ them within virtual teams to reach certain goals. In this paper, we describe the design process for such a course offering.

2 The Case – Problem Statement

The Swiss Distance University of Applied Science provides the practical case for our concept. The school offers a Certificate of Advanced Studies (CAS) in ICT consultancy. In the course program is a need for a practical course where students can get some hands-on experience in real consultancy projects. The idea of this course is that companies shall contribute real world problems that will be tackled by the students who shall develop and present possible solutions for these problems. The students shall work in teams. Each of the teams cooperate with a specific business partner on a given problem and will be guided by coach from the school.

Because the school is an institution of distance learning, it is quite common that the participants of their courses are located at different places across Switzerland. The school has developed several instruments and uses routinely digital e-learning platforms to handle the specific learning situation. A course like the described one, however, poses a specific challenge for distance learning. Consultancy projects usually require an intensive personal contact between the clients and the (student) consultants. It would take some time and costs for all the different people (students, coaches, business partners) to convene for personal meetings to work together on the tasks of the course. Therefore, there has been a need for a concept that allows to conduct those consultancy projects in virtual teams with a rather limited number of personal meetings. The goal of our project is to develop an innovative course scenario that allows for virtual team work in a complex cooperation situation by using suitable modern technology and to prove that such a setting will work.

3 Theoretical Basis

The key issue for our innovative course project is the establishment of a virtual team collaboration. Well-established approaches for communication in cooperative work focus on rational based media choice. These theories make propositions on the adequate use of different means of communication and collaboration for different tasks [2], [4], [12], [16]. The media properties have to be matched with the requirements of the tasks to determine which media is best suited for a given task. There are other approaches that consider the social environment and the organizational context as a driver for the choice of media [3], [5], [6], [10], [11], [13], [15].

The application of media choice theories in practical situations is somewhat limited. Among others, the reason is that these theories for determining the task-media-fit provide only a rather limited set of stereotypical tasks which often do not reflect the reality accurately. Therefore, Riemer and Filius [16] propose an approach based on communication genres. These are defined as repeated communication patterns which are established within a community of discourse. It is assumed that any communication practice in a group may be represented by a limited set of genres. It is therefore important to identify the relevant genres for a work situation of a given group. Then, for each genre one may determine the appropriate media that reflects the specific needs of that genre. We use this approach in our project.

4 Research approach

The conception of the virtual consultancy course follows a Design-Science-like approach [14]. The artefact that has been developed so far is the course design. To prove the utility of this concept we develop a test concept. This course will be run for the first time as a pilot project in the spring term 2020. During this pilot project we will conduct extensive tests so that we may discover whether the concept works and what problems will occur.

The structure of the course is shown in Fig. 1. It shows the different stages and milestones on the horizontal axis and the involved stakeholder groups on the vertical axis. The bidirectional arrows represent communication between the different stakeholders. In the center of this concept are of course the students. With the exception of the “Preparation” and the “Final Stage” they are involved in every stage and milestone of the course. The communication within the student groups is represented by a horizontal arrow in an oval. This group work takes place mainly in the transitional stages in which the student groups have to work on their tasks. During this group work the students may contact either the business partners for information or their coaches for advice which is shown by the respective arrows. The so-called milestones are events where the students meet their advisors and/or their business partners be instructed or to present the result of their work. It is planned to have two pitches with the business partners (Milestone III and V) which will be preceded by a preparation event only with the coaches (Milestone II and IV).

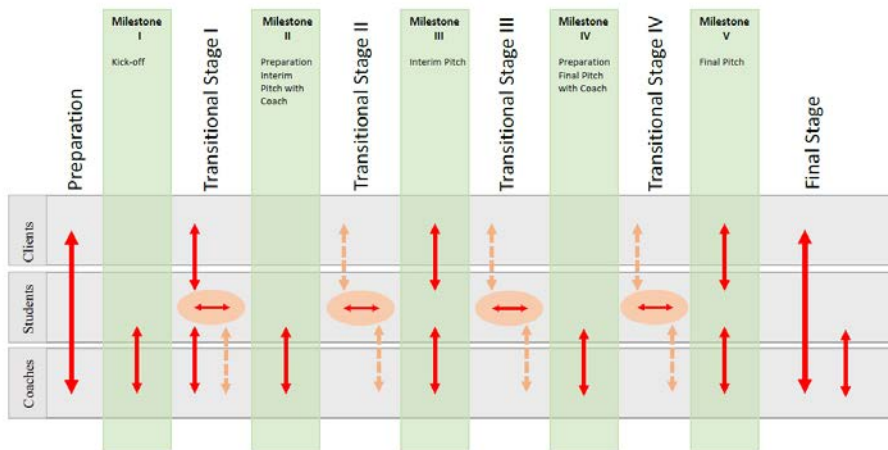


Fig. 1: Structure of the course

There will be several communication episodes between the different stakeholders during the course process. As a result of a conceptual analysis of the anticipated way of communication we propose seven genres. These are the following: Discussion (G1), Feedback (G2), Socio-emotional communication (G3), Presentation (G4), Coordination (G5), Creation (G6), and Extraction (G7). The genres have specific requirements

for the quality of communication and therefore for the suitable communication tools. We have collected all those details in a comprehensive table. Fig. 2 shows a small excerpt to give an impression.

Communication episode (CE)	Activity	Actors	Result	Genre Description	Actions
Creation of the module concept and advertising content	Evaluate module evaluation, results, debriefing and field reports Define aspects/points of the revision (e.g. adaptation of learning objectives, contents, structure, procedure, material plan, literature, examination form).	Head of studies - Module author	List of items to be addressed in the course of the revision, Revision order	Creation - module (G6)	Synchronous group work, creation of documents, presentation at the end
	Edit and finalize module plan (=> module concept/module description) according to revision order.	Head of studies - Module author	Module plan	Creation - result (G6)	Synchronous group work, creation of documents, presentation at the end

Fig. 2: Table of the communication episodes and proposed media use (excerpt)

For validating the developed course concept we will use an exploratory case study approach to collect and analyze data [11]. The main source of the data will be the different stakeholders of the course, i.e., the students, the coaches of the course and the involved executives of the participating companies. First of all, we plan to conduct observations at the milestones of the course where several stakeholders meet to present and discuss critical issues and results. In addition to that, we are going to apply semi-structured interviews with all participants of the course. To this end, we are about to develop and validate an interview guideline [8]. This guideline comprises a conceptualized model of subjective rising barriers according to media choice in virtual team collaboration based on literature. Altogether, interviewees should talk about any specific situations where they have perceived the virtual collaboration either as beneficial or problematic and how they dealt with any problems.

5 Conclusion

In this paper we have presented our ongoing activities in implementing an innovative education course to train students to work in ICT consultancy projects. This course will heavily use virtual team collaboration which will spare the different participants frequent time consuming travel for personal meetings.

There are both practical and scientific purposes related to this project. For practical purposes it is the aim to develop a concept for an educational consultancy project that works in the context of virtual teams. This reflects the specific situation of the Swiss Distance University of Applied Science. Furthermore, this innovative approach might be an example for the practice in modern ICT consultancy projects. For scientific purposes, it is of interest whether an educational consultancy project that relies heavily on ICT groupware tools will be successful. We want to know which problems and limitation will impair this project and governs the choice of media. In particular, we are eager to know whether the choice of media and tools in different communication situations strictly follows the rationale of media choice theory or is influenced by other effects.

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