TEAMWORK AND BRACO QUESTIONNAIRE

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RECOMMENDED CITATION

Fidalgo-Blanco, Á., Sein-Echaluce Lacleta, M. L., & García-Peñalvo, F. J. (2017). *Teamwork and BRACO Questionnaire* (Technical Report GRIAL-TR-2017-002). Retrieved from Salamanca, Spain: Grupo GRIAL. https://repositorio.grial.eu/handle/grial/814. doi:10.5281/zenodo.399503

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1. Introduction

The objective of the survey is to obtain reliable data that allow check the experimental and control groups to know the impact of the research carried out. In order to do this, information should be obtained about information (characteristics and profile of the people who are going to participate in the research), process (perception about the whole learning process received by the students participating in the experience) and output (perception about evaluation and the workload of the activities they have had to carry out). With this data, a complete view of variables associated with a timeline will be obtained: before beginning the investigation, during the process and the impact of the same.

The used instrument is an adaptation of the SEEQ (Student Evaluation of Educational Quality – http://teaching.usask.ca/classes/course-evaluations.php#SEEQ) questionnaire, for measuring all dimensions, with the exception of the characteristics of the participants. For this dimension, students' data have been used, such as their entry to the university grades, age, sex and number of times they have taken the subject.

The SEEQ survey can be used in learning processes and activities. In this case, it has been adapted for teamwork competition following the CTMTC (Comprehensive Training Model of the Teamwork Competence) method [1-8]. The CTMTC method follows a white box model (teachers can see the work status at any time) and provides evidences on a continuous way. The evidences are of three types: individual (associated with the individual intervention of each person who compose the work team and reflected in the forums), group (the phases and tools used in teamwork: mission and objectives, normative, map of responsibilities, schedule, execution and storage) and the results (final work and lessons learned).

Likewise, the students of the experimental group used knowledge that reflects the experience of the students of other courses. This experience is managed through a knowledge management system called BRACO (*Buscador de Recursos Académicos Colaborativos*) [9-23]. This system classifies and organizes the experience acquired by students with teamwork. In addition, it provides customized search engines to each needs of the work team.

2. Questionnaire

EG- Experimental Group, CG- Control Group

A- Learning-Enthusiasm-Organization dimension

Q01-EG-CG. Express your agreement with the following statements about your learning from the teamwork. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q01_1. Teamwork on the subject has seemed to me intellectually stimulating.
- Q01_2. I have learned teamwork skills that I consider valuable
- Q01_3. My interest in working as part of a team has been increased due to the acquired experience.
- Q01_4. I have learned and understood which are the skills that make more effective the teamwork.

Q02-EG-CG. Express your agreement with the following statements about your tutor during the teamwork. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q02_1. The teacher has been accessible.
- Q02_2. The teacher has attended me correctly when I have asked for help or advice about the work.
- Q02_3. The tutor's style of communication has made sessions and activities enjoyable.
- Q02_4. The teacher has been available for tutoring during teamwork sessions.

Q03-EG-CG. Express your agreement with the following statements about the organization of the teamwork. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q03_1. The teamwork methodology was clearly explained before starting the work.
- Q03_2. The used tools (forums, Wiki, Dropbox) by the team were appropriate and easy to handle.
- Q03_3. Exposure and correction of the works in the classroom have improved team performance.

Q04- EG-CG. During the teamwork, you have developed a calendar and a team responsibilities map, have been involved in team discussions on the forums, have collaborated in the creation of the Wiki, and have shared documents of interest in Dropbox or Google Drive. Choose your level of agreement with the following statements about these resources. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q04_1. The activity calendar of the team has been valuable for organizing different tasks.

- Q04_2. The responsibilities map has been valuable to know who was in charge of each task and each deadline.
- Q04_3. The forums have been valuable for collecting the ideas of the debates and the most important team's decisions.
- Q04_4. The Wiki-Moodle has been valuable for gathering all the information regarding team organization and for the coordination of the tasks.
- Q04_5. Dropbox/Google Drive has been valuable for sharing relevant documents to the teamwork.
- Q04_6. Generally, the teamwork method used has allowed me to track the work and the progress of the task.

B- Contents dimension

Q05-EG-CG. Express your agreement with the following statements about the contents of the page included in Moodle 'Examples of final results of teamwork', which have been created by Biotechnology students in the previous year. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q05_1. I have seen this page before doing the teamwork.
- Q05_2. The works of this page have been useful for deciding the theme of the work of my team.

Q06-EG-CG. Express your agreement with the following statements about the videos page in Moodle 'Teamwork. What is evaluated and how to edit a Wiki Moodle' to show different aspects of teamwork. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q06_1. I have watched the videos.
- Q06_2. I have found the videos useful for the further development of my teamwork.

Q07-EG. Denote the number of resources found through BRACO that you viewed (0, 2 to 4, 5 to 7, >7)

Q08-EG. Express your agreement with the following statements about the access and usefulness of the BRACO resources. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q08_1(EG). It has been easy to access BRACO resources
- Q08_2(EG). BRACO has been useful for the phase "Mission and objectives"
- Q08_3(EG). BRACO has been useful for the phase "Normative"
- Q08_4(EG). BRACO has been useful for the phase "Map of responsibilities"
- Q08_5(EG). BRACO has been useful for the phase "Schedule"
- Q08_6(EG). BRACO has been useful for the phase "Execution"
- Q08_7(EG). BRACO has been useful for the phase "Storage"
- Q08_8(EG). BRACO has been useful for the phase "Final result"

Q09-EG. Express in what sense BRACO resources have been useful (you can choose several options).

- Q09_1(EG). They have helped me to know how to do the different phases.
- Q09_2(EG). They have helped me to make the teamwork.
- Q09_3(EG). They have given me ideas to create resources.
- Q09_4(EG). They have helped me to create new ideas.
- Q09_5(EG). They have helped to understand the teamwork method.
- Q09_6(EG). Other

Q10-EG. Would you recommend the use of BRACO for the teamwork methods in other subjects? (YES, NO)

Q11-EG. Express your agreement with the following statements about the impact of the BRACO resources during the development of the teamwork. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q11_1-1(EG). Phase "Mission and objectives" has seemed to me to be complicated BEFORE using BRACO
- Q11_1-2(EG). Phase "Mission and objectives" has seemed to me to be complicated AFTER using BRACO
- Q11_2-1(EG). Phase "Normative" has seemed to me to be complicated BEFORE using BRACO
- Q11_2-2(EG). Phase "Normative" seems to be complicated AFTER using BRACO
- Q11_3-1(EG). Phase "Map of responsibilities" has seemed to me to be complicated BEFORE using BRACO
- Q11_3-2(EG). Phase "Map of responsibilities" has seemed to me to be complicated AFTER using BRACO
- Q11_4-1(EG). Phase "Schedule" has seemed to me to be complicated BEFORE using BRACO
- Q11_4-2(EG). Phase "Schedule" has seemed to me to be complicated AFTER using BRACO
- Q11_5-1(EG). Phase "Execution" has seemed to me to be complicated BEFORE using BRACO
- Q11_5-2(EG). Phase "Execution" has seemed to me to be complicated AFTER using BRACO
- Q11_6-1(EG). Phase "Storage" has seemed to me to be complicated BEFORE using BRACO
- Q11_6-2(EG). Phase "Storage" has seemed to me to be complicated AFTER using BRACO
- Q11_7-1(EG). Phase "Final result" has seemed to me to be complicated BEFORE using BRACO
- Q11_7-2(EG). Phase "Final result" has seemed to me to be complicated AFTER using BRACO

Q11-CG. Express your agreement with the following sentences about difficult of the development of teamwork phases. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q11_1(CG). Phase "Mission and objectives" has seemed to me to be complicated.
- Q11_2(CG). Phase "Normative" has seemed to me to be complicated.
- Q11_3(CG). Phase "Map of responsibilities" has seemed to me to be complicated.
- Q11_4(CG). Phase "Schedule" has seemed to me to be complicated.
- Q11_5(CG). Phase "Execution" has seemed to me to be complicated.
- Q11_6(CG). Phase "Storage" has seemed to me to be complicated.
- Q11_7(CG). Phase "Final result" has seemed to me to be complicated.

Q12-EG-CG. With whom would you share the resources that your team have done during the development of teamwork? (you can choose several options).

- With nobody.
- With my friends.
- With other teams of my educational group.
- With other teams of my degree.
- With other teams of other degrees.
- With whom asked me the resources.

C-Evaluation – Workload dimension

Q13-EG-CG. Your work in the team has been evaluated on individual, group and outcome evidence. Express your level of agreement with the following statements. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q13_1. The evaluation system of teamwork has been good and proper.
- Q13_2. The used evidences (interventions in the forum, activity on the Wiki and store files) for evaluating the personal responsibility reflect the real work of each person on the team.

Q14-EG-CG. Express the total number of hours you have invested in making each phase of teamwork (Likert: 1-less than an hour; 2-between 1 and 3 hours; 3-between 3 and 5 hours; 4-between 5 and 7 hours; 5-more than 7 hours).

- Q14_1. Workload in phase "Mission and objectives".
- Q14_2. Workload in phase "Normative".
- Q14_3. Workload in phase "Responsibilities map".
- Q14_4. Workload in phase "Schedule".
- Q14_5. Workload in phase "Execution".
- Q14_6. Workload in phase "Storage".
- Q14_7. Workload in phase "Final result".

D- Overview dimension

Q15-EG-CG. Express your level of agreement with the following statements about the teamwork you undertook. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q15_1. Generally speaking, the team has worked better compared to previous work.
- Q15_3. The workload has been shared equally among the team members, which means all of us have worked equally.
- Q15_3. The teamwork method has prevented shirking responsibilities.
- Q15_4. The deadlines have surprised us and we have done the job at the last minute.
- Q15_5. The quality of the work done has been better than in previously works conducted in other subjects.

Q16-EG-CG. Express your level of agreement with the following statements about the teamwork method that we implemented for this subject. (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q16_1. It should be applied to other subjects works.
- Q16_2. Comparing with previously work done, the method used in this subject has been more suitable to work together in a professional way.
- Q16_3. I will to use the techniques and tools in my future academic teamworks.

Q17-EG-CG. Express the most liked aspect of this teamwork method.

Q18-EG-CG. Include the most unliked aspect of this teamwork method.

Q19-EG-CG. Include your suggestions to improve the teamwork method applied in this subject.

E- Characteristics of participants

Q20-EG-CG. Write your work-team code in this subject (for example, M3 in morning group or T4 in afternoon group).

Q21-EG-CG. Are you the coordinator of the work team? (YES, NO).

Q22-EG-CG. Age.

Q23-EG-CG. Gender (Female, Male).

Q24-EG-CG. How many academic years, including the current one, have you been in the university? (1, 2, 3, 4, other).

Q25-EG-CG. What is your university entrance grade? (for example: 12.6).

Q26-EG-CG. In your opinion, what is the degree of relevance of the 'know how' of the teamwork in your training as an engineer? (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

Q27-EG-CG. Express your level of agreement with the following statements about your personal impression regarding teamwork (Likert: 1-total disagree, 2-disagree, 3-neutral, 4-agree, 5-total agree).

- Q27_1. Teamwork is usually stimulating.
- Q27_2. I like working with my colleagues. I am very sociable.
- Q27_3. I learn more working as a team than alone.
- Q27_4. I prefer to do individual work instead teamwork.
- Q27_5. I pass the examinations easily doing teamwork.
- Q27_6. I usually waste more time when work is done on a team.

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