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Developing 21st century skills with collaborative argumentation trainings

The paper addresses the integration of cross-disciplinary competences, in particular the 21st century skills related to communication, collaboration and critical thinking into teaching at higher education institutions (Dean and Forray 2018; Pelger and Nilsson 2018; Ritter et. al. 2017). Results from the Global University Employability Ranking 2017, published by Times Higher Education (THE), stated that graduates need the right skills to succeed on the job market. For more than four out of five employers, communication skills and problem solving/critical thinking are the top-ranked desired qualifications, followed by adaptability, initiative, and collaboration (THE 2017). How can teachers help students to develop these 21st century skills? We believe that instructors can address several of these transferable skills with collaborative argumentation trainings.

The paper reports and analyses evidence from the continuous improvement on the collaborative argumentation training that we developed for a management lecture. We explain the exercise and summarize learnings from running the training in the past three years. Since 2015, every year about 20-30 bachelor-, master-, and continuing education students work through the seven-week course module. The training uses scaled assignments that build up over seven sessions in which students work in diverse teams of three to five participants and research their topic, develop an efficient argumentation strategy, and prepare to present their arguments in a competitive setting. At the final debate, the class audience is involved as a jury. With regard to the design for learning, the instructor's interventions comprise subject matter instruction, organizing a peer feedback loop (with www.peergrade.io), commenting on the teams' research and argumentation strategies, and moderating the actual debate.

Our data set contains video-material from debates, learner analytics from peer feedback loops, and student learning surveys. From our experience, the collaborative-competitive peer-learning framework helps students gain a deep understanding of the subject matter and apply their knowledge during the performance of a live debate. With regard to communication skills (Tsang 2017), they learn to collaborate, state correct facts, deliver their message, defend it against criticism, and exploit weaknesses in the opposing team's argumentation.

The paper concludes by analysing the strengths and weaknesses of a training of communication skills, critical thinking, and teamwork and outlines the potential of further studying training effects on the students' 21st century skills development. We believe that instructors can adapt the training to numerous teaching settings.

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