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Evaluation of Teaching Team Stress Factors in Two Engineering Education Programs

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Abstract : Team learning has been studied and modeled as double loop model and its variations. Also, metacognition has been suggested as a concept to describe the nature of team learning to be more than a simple sum of individual learning of the team members. Team learning has a positive correlation with both individual motivation of its members, as well as the collective factors within the team. Team learning of previously very independent members of two teaching teams is analyzed. Applied Science Universities are training future professionals with ever more diversified and multidisciplinary skills. The size of the units of teaching and learning are increasingly larger for several reasons. First, multi-disciplinary skill development requires more active learning and richer learning environments and learning experiences. This occurs on students teams. Secondly, teaching of multidisciplinary skills requires a multidisciplinary and team-based teaching from the teachers as well. Team formation phases have been identifies and widely accepted. Team role stress has been analyzed in project teams. Projects typically have a well-defined goal and organization. This paper explores team stress of two teacher teams in a parallel running two course units in engineering education. The first is an Industrial Automation Technology and the second is Development of Medical Devices. The courses have a separate student group, and they are in different campuses. Both are run in parallel within 8 week time. Both of them are taught by a group of four teachers with several years of teaching experience, but individually. The team role stress scale items - the survey is done to both teaching groups at the beginning of the course and at the end of the course. The inventory of questions covers the factors of ambiguity, conflict, quantitative role overload and qualitative role overload. Some comparison to the study on project teams can be drawn. Team development stage of the two teaching groups is different. Relating the team role stress factors to the development stage of the group can reveal the potential of management actions to promote team building and to understand the maturity of functional and well-established teams. Mature teams indicate higher job satisfaction and deliver higher performance. Especially, teaching teams who deliver highly intangible results of learning outcome are sensitive to issues in the job satisfaction and team conflicts. Because team teaching is increasing, the paper provides a review of the relevant theories and initial comparative and longitudinal results of the team role stress factors applied to teaching teams.

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