# Team Work Teaching Concept

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## Abstract

This contribution describes a concept for a new prepared form of teaching at the Faculty of Mechanical Engineering V_B TUO based on naturally originated teams from the student groups solving projects within a framework of their diploma works. It deals with problems of how to introduce elements of a team work effectively into the present study program and the evaluation system. It describes a mechanism of introducing teams, the principle of their support and their evaluations.

## Introduction

The development in industrial areas is no longer a domain of successful individuals, but well organized teams consisting of a large scale closely cooperating specialists. Understandably, work in such teams has their own specifics. Expertise and creativity are not sufficient, the abilities to work in a team is needed too.

Unfortunately, at the present time, the Czech educational system is fully focused to individuals in all forms of study. The university graduates enter the work market without any experience of a team work during their study. In other words, from the point of view of the present practice, these graduates are not well prepared for their future employments.

This situation forced us to change current methodology and propose changes which will prepare students much more for a team work in their profession. A new innovative proposal was defined which brings requested components in student team work and it is not in conflict with existing educational system.

## The basic objectives of new concept

First of all, it's necessary to bring into attention that new approach is focused in formation teams of students from different study programmes at the Faculty of Mechanical Engineering, V_B-TUO. There was not any obstruction in creating small groups of students at the level of study programmes or courses and it is under full control of the departments or teachers. This approach was common for a long period in many current courses but it is very different in contracts to team work or cooperation in real life.

The main aim of this new approach is support building teams of students from different departments. They solve together projects which needs specialists from different areas. This types of team building activities are close to real profession.

New concept is not allowed to disorganize current educational system. Total change is not possible. The main reasons are obligatory accreditation of study programmes and The Higher Education Act (No. 111/1998, amended several times). It is necessary to find solution which will expand current education system not put it out of order.

Requirements and limitations for concept of student teams include:

1. Concept actively supports establishing teams within study programmes.
2. Student teams will solve complex tasks as part of their final project.

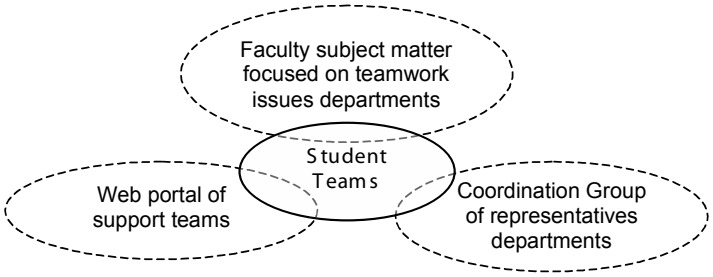
3. Student participation must be voluntary; motivation must be based on a positive impact.
4. Formation and operation of the teams must be natural with maximum competence of their members.

## Basic concept

There are there principles of the new concept:

1. Course with faculty impact focused at team work
2. The web portal for an electronic support of formation and an operation of the teams.
3. Coordinating group which includes faculty members for support of the student teams.

Figure 1: fundamental pillar of basic concept




The primary component is faculty course which will drag into team work topic. The content of the faculty course is divided into three parts:

- Building student teams – principles, organization, evaluation
- Presentation of departments and their field of study or research
- Introduction to team topics

Course attendants will be familiar with all necessary information for establishing and organizing study teams. The aim of this course is to provide an overview about topics, activities and personal support. The coordinative group will prepare topics with detail information about necessary size of the group, theme and stages of the team project. Some of the topics will have competitive characters – student will compete between each other for best solution.

Teachers will coordinate establishing teams but students themselves will be in charge of bringing team members together and organizing their activities. They can use web portal as support and advices from teachers.

Due to our premise some of the students will likely become team leaders by nature. These team leaders will do registration at the web portal and start steps for building their student team. There will be a special section at the web portal for publishing listings of free positions in teams with detail description of the position. They can also contact teachers for help with coordination of teams.
The web portal will be core component not just for building and organizing teams at the beginning but also for providing communication during solving the team project. Every student as registered member will have personal page with basic information about him and area of his professional interest. The portal will provide list of all teams and their members and there will be published also final output of their team project.

Once the teams will be established, members will contact coordinative group. They will assure supervisor of their final project and all together will form aims, tasks and methodology of the team project. The reason for this is to secure particular presentation of student members of their tasks even when team will collide. Evaluation of student's work will be conduct individually according to solution of his particular part on the project. Overall evaluation of team work will be provided separately. This principle will not affect current evaluation process of present educational system. Among others it will reserve student independence from success level of other team members and he should

not worry about his grade from this course.

## Formation of the student teams

Steps for building and coordination of teams include:

1. Applicants for team work assignment will get to know with experience, field of study and profile of students from different department. They will be also informed with basic principles of team work.
2. The coordinative group will prepare topics with detail information about necessary size of the group, theme and stages of the team project. They will also define topics with competitive character.
3. Students will familiarize with topics of team work projects.
4. Team leaders will provide registration at the web portal, choose topic and start necessary steps to build the team (using classified section of the portal).
5. Interested students will contact team leaders for confirming their participation on the chosen project.
6. Team arrange roles, tasks etc.
7. Members consult their tasks with supervisor of the project and he prepare assignment of their graduate or post-graduate final thesis.
8. The student teams deals with tasks and consult problems during course tutorials.
9. The teams compete with projects between themselves and expert commission provides evaluation of their work.

## Motivation of students

Overall concept of this new approach is based on voluntary participation at team work. It is critical to attract student for this approach and it is necessary to create motivation on a positive impact. There is significant need for alumni with team work experience from industry companies. Students are familiar with situation at the job market and their primary motivation is to expand their value to get interesting work position. Course attendants will receive certificate with confirmation and description of their participation on team work project. Among other motivation factors is chance to work on current industry projects which will be support by financial benefits and offer of work position.

## Conclusion

At the present time a concept of this new approach is in a preparation stage. Necessary financial funds for realization are secured. An application for support from The European Social Fund (ESF), operational programme Tertiary Education, Research and Development in Developing human potential in research and development priority area was submitted to Czech The Ministry of Education, Youth and Sports. We are in initiative stages of establishing web portal for providing an electronic support of formation and an operation of the student teams and we also put together documentation, course materials connected with principles of formation work teams and contact industry partners.

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