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Title of the case

Talent Factory Connecting Working Life and Education

Sales pitch

A success story combining companies and education based on team learning and coaching pedagogy.

1. Background and objectives

In the spring of 2017, the Bioproduct Engineering Degree Programme at Tampere University of Applied Sciences (later used with its' official abbreviation "TAMK") implemented for the first time a new type of learning environment, where first-year students study in work-oriented teams. The learning is supported by coaches and participating companies. The background for this was that the degree programme having an intake of 60 students per year, was suffering of lack of motivated applicants and because of this the number of dropouts was alarming. Also, it was found out that the students were frustrated to start their university studies with mathematics, chemistry, and physics, exactly the studies that they just recently had when graduating from high school or vocational school. The teacher team in the degree programme believed that by offering in the beginning studies that combine working life skills and knowledge, team learning and coaching pedagogy, the students would get better motivated and commit to their studies. The goal was to offer problem-oriented and creative way of learning in which the students' working life skills can be developed.

The concept was developed at TAMK because of specific need to get motivated students with commitment for their studies and thus improve the attraction of the degree programme. The target of this concept is to provide for the first-year students an interactive learning environment that meets the requirements and competence skills from working life. There was a clear message from the companies that in addition to substance competence, equally important are other working life skills. Talent Factory gives many opportunities to be innovative and practice teamwork skills which makes the students to know their strengths, gives them self-confidence and improves their performance.

The students at Talent Factory get to know companies operating in the forest-based industry and chemical industry and they learn to understand the connection between the substance they study and working life. Talent Factory also enables the students to create a professional contact network right from the beginning of their studies. Talent Factory concept improves students' commitment to their studies, and most students succeed in getting their first internship at company they have had co-operation with. At the same time, the companies get to know not only TAMK's scope and prospects, but also individual student's potential in terms of future recruitments.

2. Activities

Talent Factory consists of ten student teams, six students in each team. Every team has a teacher acting as team coach and an own company representative supporting the team's work. Successful team dynamics is important for the success of the Talent Factory. Therefore, a personality test is used for targeting equally strong student teams. Based on these results, the coaches form the teams in such a way that there are diverse personalities in each team. Also, students' wishes for the companies they are most interested in are taken into account.

The companies participating in Talent Factory support the weekly theme-specific learning tasks. Each coach has two teams. The coach has meetings with each team every week, holds coaching sessions and gives support and task guidance. The students' week consists of team tasks, coaching and team meetings. The teams work typically five days a week from 8.00 am to around 4.00 pm as it simulates also working life conditions. Assessment in this unit consists of team assignments and exams.

The weekly themes include for example orientation to the field of industry and stake holders, production, raw materials, resource and project management, sustainability, and environmental issues as well as quality management and customer relationships.

In Talent Factory, the studies take place in one semester, about 15 weeks according to the curriculum. The semester consists of two bigger sets of study courses: "Fundamentals of Forest-Based and Chemical Industry" and "Engineer's Business Skills". Both study courses are 10 credits, totally 20 ECTS. 1 credit means an average of 27 hours of student work.

Each week all teams will have the same weekly tasks and duties that they work together in co-operation with the companies. The teams are working with the innovation task including Pecha Kucha presentation and pitching. They study raw materials, products, production processes and sustainable development aspects. The students will learn detailed unit processes in the forest-based and chemical industry as well as communication and team working skills, responsibility, project management, quality thinking and safety at work. The development of business communication skills is of central importance at Talent Factory. Reports, presentation materials, and memos are written in Finnish, but some of them can also be in English. The goal is that by the end of the 15 weeks long semester, every student can give an oral presentation in both languages. The teams are also required to make a 5-minutes long video based on the topics of different themes. Video is a modern way for the students to present what they have learned. The coaches create learning situations, work life-oriented tasks and problems to be solved, guide, encourage, give feedback, and evaluate. Supporting companies in the forest based and chemical industry play a valuable role. They enable the student team's visits to the company, provide information, support learning, and provide the student team with materials.

The coach makes sure that the team progresses in their weekly tasks and supports the teams in working together towards the goal. In the coaching meetings, the team reflects on its' activities, and the aim is to find solutions to possible challenges of interaction in co-operation within the team. The coach gets to know the team members very well and accordingly, it is easy for the team to discuss any issues with the coach. The coaches' role is to strengthen the team by encouraging each team member to be brave towards new tasks and to trust on not only on themselves but also on teamwork and the joint process in the future as well.

3. Support mechanisms

The companies play an important and valuable role in Talent Factory. They give support in many different ways. They have taken good care of the teams by providing material, inviting for visits, and giving guidance in different tasks. Many students are employed for internships by the companies they work with in the Talent Factory. In turn, the companies get up to date information about TAMK and its' specialists, facilities, and services. The companies have possibility to participate in the development of the engineering education, and they get to know motivated and potential students as future employees for their companies. Talent Factory gives the companies also a positive visibility for the whole engineering education in Finland.

The structure of Talent Factory requires ten supporting companies each year. The companies are usually chosen mainly from the area close to the main campus of TAMK. There has been every year more interested companies to be involved with Talent Factory than can be taken. During the past five years we have totally had twenty different companies and company representatives joining Talent Factory.

One of the key elements in Talent Factory is that TAMK provides coaching pedagogy training for teachers. The coach's role is mainly to spar and answer the students' questions, guiding them to find answers and figure things out themselves. The goal is to provide the students with metacognitive skills that they need to cope in later studies and future working life situations, e.g. awareness of their own strengths and weaknesses and the ability to plan and evaluate their own and the entire team's activities.

Another major support from the TAMK was to provide a non-conventional and functional classroom for this interactive team-driven learning environment. Two existing classrooms were put together creating a space of almost 100 m². The space was refurbished with colorful and flexible groups of tables, chairs, and sofas. An online meeting technology with two big screens was built for team presentations. The importance of the new kind of learning environment was to simulate working life as authentically as possible.

4. Outcomes, impact and ecosystem

The students have given feedback both individually and in small groups. The feedback has been mostly very encouraging. The students felt that their self-confidence and motivation for studies had significantly improved, and they were especially happy for receiving support from coaches always when needed.

“It's been nice to get to know new student friends at Talent Factory, when otherwise I haven't been able to during Covid-19 pandemic. It has been easier to start school as a group than alone, and working together is rewarding. It has also been interesting to learn about the companies and tasks in my own field through various visits and seminars.”

“Working in small groups has been nice and rewarding. Each member of the group has been allowed to participate and make their own contribution to the group's common tasks. Co-operation with the company has given me the opportunity to get to know my field more deeply and what practical work entails.”

The feedback from the teachers, in this case coaches, has been positive from the very first beginning. It has been clearly seen that the students' commitment to studies has improved and less dropouts were listed since Talent Factory was started. The improvement of the students' teamwork skills was seen by many teachers also after the first year of studies, when the conventional teaching took in place. It was also seen that the study flow was also clearly improved, and the students showed good energy and motivation for further studies. It was recognized that the students that had participated in Talent Factory were much more self-driven later in their studies and projects than the ones that had not participated in Talent Factory.

The feedback from one of the companies involved with Talent Factory states that as working life is rarely about grinding alone, the skills provided at Talent Factory meet super well many requirements from working life. The students work in teams that simulate authentic working life, in which the co-operation between different experts is emphasized and the students learn how the goals are set for the work and are achieved. Co-operation skills are essentially related to leadership. Leading both

others and your self is significant importance in real working life. The willingness of most of the companies to continue a co-operation with TAMK and Talent Factory is seen as a great success of this action and major positive feedback.

5. Challenges and success factors

The success of the Talent Factory is due to motivated and coach-trained professional teachers. An important factor in the success has also been TAMK's good reputation as a working-life oriented university, and the close connections between teachers and a variety of companies. The reputation of Talent Factory has been recognized over the years, and there has been every year new companies interested to participate in it.

Team dynamics play a significant role in the success of the Talent Factory. Although the students are set into different teams by personality tests and their wishes for the supporting companies, there are always some challenges. Conflicts might arise within the team members, or the tasks may not always proceed as desired. The teams are asked to solve possible challenges themselves, but if this does not work out, the coaches will help through team conversations and, if necessary, also with individual discussions.

The Bioproduct Engineering and Laboratory Engineering have natural and active co-operation between teachers. Inspired by the experiences gained from the Bioproduct's Talent Factory, the same model was launched in the Laboratory Engineering in spring 2022. The model of the Talent Factory was applied the same as well as the role of student teams and coaches. The companies involved were chosen among those that are active stake holders of Laboratory Engineering.

A success factor in the case of Laboratory Engineering was that the coaches already knew the students, which besides the personality tests helped to create teams where the students work well together. Also, in this case the implementation time was one semester, but the time of implementation was chosen differently based on the purpose. In Laboratory Engineering the courses are integrated mostly in advanced professional courses as the students have at that point already completed numerous vocational studies and at least one internship. Therefore, the students have gained already strong professional view that can be utilized in their learning assignments. A challenge in timing in this case was that the students were already used to a conventional way of studying, and their attitude toward the new learning environment varied. When implementing this new type of learning in Bioproduct Engineering, the students were more open minded, and they adapted quickly team learning model.

6. Conclusion and future outlook

The Talent Factory implements team learning, in which the companies involved act as role models and they helped for the assignments given to the student teams. There have been already 300 students and thirteen companies involved in Talent Factory with very encouraging results and feedback. The attraction and number of applicants for this programme has improved and the number of dropouts is very few. This is mainly due to having the working life actions already in the beginning of the studies. In the future, the co-operation with the companies could be developed further by integrating companies even more actively. One possibility would also be to change from team-specific companies to subject based companies. In this model, each company would have its own subject area, in connection in which it would give assignments for the teams and spar all teams in the subject area. Talent Factory has a bright future ahead!