

Practice makes perfect!
Developing an internship process in Finnish universities

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INTRODUCTION

An internship can bridge theoretical knowledge with essential working life skills, improve student's confidence towards his/her own profession and know-how, and advance further studies and networking [1]. According to several studies, e.g. [2]; [3], an internship period or other comparable work placement period during university studies will enhance students' career development later.

Generic working-life skills, for example team working, problem solving and communication skills play an important role in employment after graduation [2]. Substance skills are not adequate if a person cannot adapt them in a working life [4]. Even getting used to regular and target-oriented working will enhance employment in general after graduation [1].

An internship period is often the first familiarization with the own subject field line of work, and students may think that the internship period is the only way of learning working life skills. However, students do not always recognize the generic skills they have gained during their working life period, and do not realize the usefulness of them. Therefore, generic working life skills should be part of the learning outcomes of internships, as well as the whole university degree [2].

Internship practices can be very different between universities, and even inside the same university between degree programs [5]. The situation is alike in Finland [6]. Based on these facts, a national group of education developers wrote an internship guide [12] and recommendations for universities, students and employers. In addition, different ways for improving students' working life skills were developed and piloted. The actions were implemented in the project 'Bridging the Gap between University Studies and Working Life' by European Social Fund. This paper discusses the implementation and results gained through two different pilot cases for promoting and implementing internships.

1 INTERNSHIP AS A PART OF A UNIVERSITY DEGREE

Universities do not have general rules for internships. According to the survey [6], the internship practices are not similar even inside the same field of education. Some degree programmes did not even have general written guidelines for implementation and reporting of students' work placement periods. When general rules are missing, operation models may be very person-dependent.

The way an internship period is integrated to the university degree has an effect on how beneficial students consider it [7]. The problem is that universities may offer many components enhancing employment, such as internships, but students do see them as separate from the degree studies. Therefore, universities should consider work placement periods as one of the key tasks [8].

1.1 Teaching of working life skills in universities

Typically, working life skills are divided into two categories: generic, transferable and soft skills, and core or hard skills and key competencies. Working life skills can be boosted in universities by three different models: specialist model means teaching working-life skills in separate courses, integrative model includes courses where theory and practice are both present, and networking culture model, which takes working life skills into account already in the curriculum planning [9]. All three models are used in Finnish universities, where internship periods are mainly, but not always, mandatory in engineering degrees.

1.2 Learning outcomes of internship periods

To get the best learning outcome from the internship, it is critical to prepare well beforehand and pay attention to the quality of internship during the period [10]. In addition to preparation, setting learning objectives and guidance during the period, an internship should include reflection, i.e. what student has learned during the internship period [7]. According to [11], students as well as other people involved in internship should reflect their actions all the time to get the most out of it. Reflection should be included to the learning objectives and into the reporting guide for internship. In Finland, only about half of universities had learning objectives and reflection guidance in their internship reporting requirements [6].

2 RESEARCH DESCRIPTION AND METHODOLOGY

A survey about internship practices in six Finnish universities [6] forms a background for the actions described in this paper. The survey included 96 different degree programs. Based on the results, the internship process was modelled and presented in an internship guide [12]. Many development pilots were started for teaching working-life skills in several universities, also. In this paper, two cases different with each other are presented as case examples. The research made along with the pilots targeted to developing the next implementation better and finally turning it to a permanent, good practice. Critical reflection method [13]; [14], was applied by teachers when they tried to understand internship as a phenomenon. The feedback from students was also in an important role, and it was benefited in planning of the next implementations.

Case survey was used as a method for studying internship periods. Case survey is heading for understanding the phenomena in the current case but also in general. Student feedback was collected and analysed; both quantitative and qualitative analysis were used, depending on a course.

3 THE PILOT CASES

3.1 Summer Project Camp (SPC)

It is challenging, especially for foreign or beginner level students to find an internship place for degree programmes where internship is obligatory. To support these students, a novel model that integrates studies and internship was developed in Lappeenranta University of Technology (LUT). During a summer holiday period, students were working in teams solving problems of their own study field, and at the same time they learned working life skills. The chronological process in SPC is shown in *Fig. 1*.

The first SPC was piloted in summer 2016 with software engineering, computational science and technical physics students. The second SPC was arranged in summer 2017, developed based on experiences gained from the previous camp.

In SPC, the working time was 7.5 h/d. Students were working in teams, in the reserved premises in the university campus area. Students had a superior in the camp – like in an ordinary work place. SPC rules, guides and documents were on a virtual operational environment. Students also returned their weekly working time reports and internship reports electronically.

Bachelor level SPC students had an opportunity to two study two university courses as their job. Responsible teachers were not present all the time, but available when students had some questions about the course substance. SPC superior oversaw the atmosphere, presence of participants, working conditions and progress of work. Superior also interviewed all participants in the beginning of SPC, had development discussion with them, and arranged regular information meetings about many themes of working life skills. The themes were selected especially from the IT business viewpoint, and included e.g. flexible working hours in companies, vacations, salary, taxes and tax deductions, contract of employment, commenting of coding, version management and quality criteria, Belbin team roles, leadership etc. In addition, students gave snapshots of their progress in work.

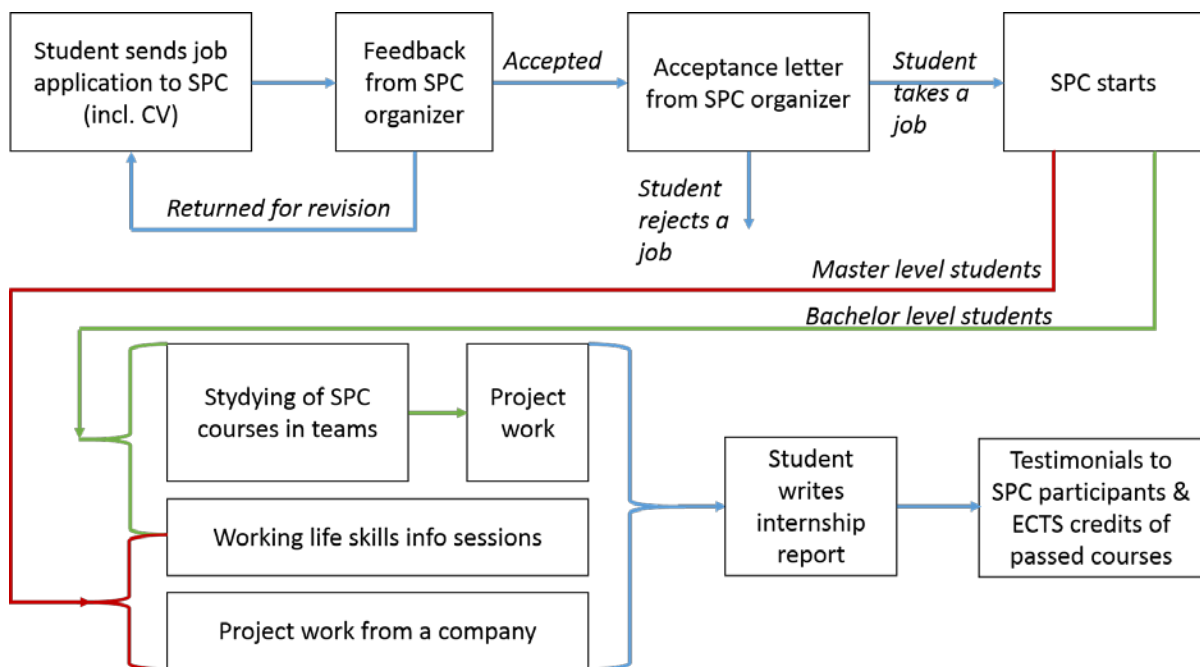


Fig.1. Summer Project Camp process. Students sent applications to SPC on March, and they got feedback. Revision of non-accepted applications was possible during April, and the organizer sent acceptance letters on May. The camp was running during June and July. In the end of SPC, students wrote their internship reports. After the camp, all participants got testimonials from SPC.

SPC implementation was studied and developed in practice based on written and oral feedback and reflections presented in Table 1. Feedback from students was gathered via questionnaire form and in development discussions. In addition, students' internship reports were investigated in order to understand how their working life skills had developed during SPC. Responsible teachers were interviewed in the end of SPC. They were also reflecting their work and reacting to their observations already during the camp. After a camp, a report of the whole SPC was written, including analyzed

feedback and reflections of teachers and general supervisor. The issues that raised from feedback were taken into account in the next year's implementation.

Actions made based on 2016 feedback: The rules of the camp were weighted already in the beginning of the next SPC. The importance of scheduling was emphasized. There was more supervision available during the whole SPC 2017. The two implementations of SPC show that the model is working well. Students experienced it as beneficial and their working life skills increased during the camp. Supervisors were satisfied with the realisation of SPC activities and results, also. The idea of SPC was widened also to some other degree programmes on summer 2018.

Table 1. Feedback and reflection from students and supervisors on SPC 2016-17.

Year	Students say they have learned	Development suggestions from students	Feedback from superior and teachers	Self-reflection from students, superior and teachers
2016	<ul style="list-style-type: none"> - project planning - project work and management - overview of work life - co-operation with project manager and customer 	<ul style="list-style-type: none"> - more supervision needed - working-life infos were good, but they interrupted the work flow 	<ul style="list-style-type: none"> - students were surprised how demanding the project work was - some students did not follow the daily schedule 	<ul style="list-style-type: none"> - definition of own work is important - independent work & benefits of team work - clear scheduling enhanced work progress
2017	<ul style="list-style-type: none"> - conceiving the wholeness of the work - importance of planning - scheduling - project work - team work - issues from working life infos 	<ul style="list-style-type: none"> - Widening the SPC idea also to other degree programmes at our university 	<ul style="list-style-type: none"> - no conflicts on teams - project work was still demanding, but students did not consider it as too heavy but instead, as beneficial 	<ul style="list-style-type: none"> - Working life infos were held in separate meeting rooms and informed well beforehand, which seemed to work well.

3.2 Renewal of internships in faculty of information technology and electrical engineering in the University of Oulu

The main objective for the internship renewal process was to improve the instructions and documentation used in all internships and similar kind of working life periods in the faculty. Previous documentation had little to none emphasis on the personal development of the student. In addition, the link between university studies and the tasks during the internship was weak. The students rarely experienced internship as a normal course with learning objectives and outcomes.

The renewal was implemented by running an internship pilot during the summer and fall of 2017. The pilot was offered as an alternative to all of the students in the faculty in both bachelor and master's phase. In total of 35 students participated to the pilot. The implementation was based on the guidelines presented in the guide [12].

In piloted internship, the amount of documentation was increased and only ongoing internship could be reported. The documentation was divided to three main phases: internship plan with personal development goals before the internship, weekly reports of progress during the internship and finally a longer report and reflection focusing on the learning outcomes and personal development immediately after the internship. The

final report was divided into five main categories: 1) Finding and applying for a job, preparing for internship, 2) Employer and the organization, 3) Duties and tasks during the internship, 4) Fulfilment of the plans and personal development and 5) Future plans.

The suitability of the documentation was estimated by comparing report model used in the pilot and the final reports used in the previous years. The reports were viewed especially from the perspective of the students' ability to identify his/her personal development and the link between university studies and working life. In the pilot some of the students were also interviewed and in some cases the student also received feedback from the employer about the new way of documenting the internship period.

The most significant difference between the renewed and the old version of internship was the composition of the final report. Previously the students mostly described the workplace and its operations while only few sentences were used to describe the actual tasks carried out by the student. Personal development was also either completely disregarded or mentioned in a single sentence. Using the new documentation clearly helped the students to compare university studies to expectations from working life, identify personal strengths and development areas and overall feel more ready to proceed in the working life after graduation. Weekly reports were specially mentioned by many students to have been the most valuable tool for themselves during the piloted internship. Many of the employers also commented that the weekly reports were useful to them and helped the supervisors to get better understanding about the progress of the student.

4 DISCUSSION

In this study, we mapped how target-oriented and supervised internship, including reflection, benefits university students. Two different cases for promoting and implementing internships were executed. One of them was internship course and one was an internship period carried out in the university context with working life conditions. The feedback from both two cases show, that target-oriented internship period and students' reflection of their learning will help students to understand better their own skills and development. They also recognise better the things they have learned during the working life period, and understand the significance of internship as a solid part of the university degree, and how it may ease employment after graduation.

Especially students who had positive attitude to reflection, benefited by finding their own strengths and interests. On the other side, reflection helped also those students who regarded it with criticism. However, superficial reflection correlated to weaker identification of gained working-life skills.

The feedback from the cases showed clearly that students felt that their working-life skills and recognising of their own skills had developed. This is a significant change compared to previous studies (for example [2]) that showed students difficulties to recognise and value their generic working-life skills. Based on our study, working-life skills could be promoted by adding reflection to internship or other working life practice periods.

The two cases were different from each other both in execution and evaluation, and therefore their results cannot be compared. Some students gave feedback about the substance, and some students concentrated on evaluating their own learning and development. Both cases, however, highlighted that according to students' experiences, their self-knowledge, know-how and understanding their own targets for future working life had developed during the course or period.

As a follow-up study, it would be interesting to investigate if employers see that students' working-life skills have developed due to the novel courses or camps, and are students better capable to link their further studies with working-life skills, after this experience.

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