

The first year experience

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Abstract

New students in their first face a double challenge: to adjust to the academic learning environment and to start their student life. Not all freshmen are able to deal successfully with both tasks simultaneously. To support students during the first stages of the adaptation process most faculties at TU Delft have implemented a mentoring system. For instance, in some cases senior students act as mentor, in other instances staff members are to act this part. Sometimes the mentoring is closely associated with educational projects, in other times it is set aside from the curriculum as a separate activity. The presentation aims to review a variety of approaches to the mentoring based on examples from TU Delft.

Keywords: engineering education; mentor system; freshmen

Introduction

Getting started with a study at the University involves many chances for the young student. Many of them have to leave their parents home and start running their own household for the first time in their life. Student life involves finding the right place to live, making new friends, becoming a member of a student society, finding a job on the side. At the same time the freshman have to adjust to the pedagogic at the University. They are expected to take responsibility for planning their own study activities. In stead of going to class, they have to attend lectures. Rather sooner than later, they find out that no-one is checking their presence.

Not everyone is able to deal successfully with all these new responsibilities at once. Each year a substantial number of students drop-out around Christmas. They have lost so much time in the first months that it has become impossible to keep up with the curriculum. More and more the Universities realize this causes an unnecessary loss of students. Since the finances of the Dutch universities depend directly on the number of successful students, measures have been taken to counter the early dropout in the form of study guidance or mentoring systems. The main objective of the mentor systems is to facilitate the transfer from secondary education to the University, hoping this will result in a decrease of dropout.

Most Faculties at TU Delft have implemented one or another form of a mentoring system for their first year students (Snippe, 1997). The systems differ from each other in terms of the type of mentor (staff, student or both), the tasks of the mentor (just social guidance or also involved in teaching), and the timeframe (weekly meetings until Christmas, or spread out over the whole first year). The objective of the paper is to analyse the differences between different mentoring systems. Examples from faculties at TU Delft are selected to represent different practices.

Mentoring systems at TU Delft

The notion that idea students need support to find their way in the University goes back quite a while at TU Delft. Before the Second World War, when the school was still a Polytechnic, a system existed at the Faculty of Architecture where each student was assigned to one of the

staff members. The staff member was named the “Patroon”, after the patron (supervisor) of the Architects workshop. Today this name still lives on in the title of the Faculty’s study guide: “de papieren patroon” (the paper patron).

The identification “mentor” is even older. Since ancient times a person helping someone to guide a young persons development process is named after Odysseus’ friend Mentor, who performed this task for Odysseus’ son Telemachos. Next, to the term Mentor, sometimes names are used like Study guide, or Tutor. The Study guide is usually a professional with a background in social sciences that can be consulted by students encountering problems in their study. The role of the modern mentor is distinct from that of a tutor in the sense that the mentor is not concerned with teaching. The objective of a mentoring system is to support the students in the transition to the University. In a mentor group, the students support each other and they provide a social reference group for each other. The Mentor is trained in process skills to facilitate the group sessions, very much like the tutor in the Maastricht system of Problem-Based Learning (De Graaff & Kolmos, 2003).

The Mentor systems at TU Delft differ from each other in several aspects. In most cases the freshman are invited to join a mentor group, often following the composition of the initiation groups in the first week. Sometimes, staff members are assigned the tasks of guiding such a group through a program of social activities, in other cases senior students are hired for this job. Also, the combination occurs of a student mentor and a staff-mentor sharing the responsibilities for a group (sometimes the professor oversees more than one group). Both the students as well as the professors are trained in process facilitation kills for this job.

The tasks of the mentor are by definition limited to social guidance and practical information, like explanations where to go for certain necessary items. A standard mentor groups program consists of about ten meetings that are to take place between the start of the academic year and the Christmas holiday (Snippe, 1997). After Christmas the students are left to their own devices. Still, it is quite a lot of time to spent on activities that are not directly study related. Participants tend to leave the groups when they feel it is not helping them anymore. As a consequence, there is a large variation in the effectiveness of the system per group. Some of the groups fall apart after a few weeks, other groups continue after Christmas on their own accord. In order to counter the lack of motivation some Faculties have integrated their mentor system with the group work in the curriculum, either by assigning the Staff Tutor also the task of a mentor, or by assigning a number of meetings for mentor functions.

The mentor systems in the following sections are selected to represent the most prominent variations.

Electrical Engineering, Mathematics and Computer Science

– Student-mentor

Over the past decade the Faculty of Electrical Engineering, Mathematics and Computer Science has had to cope with a decreasing number of students. As a consequence, unnecessary drop out was felt more heavily. The mentor system installed by the Faculty focussed in particular on the social support for students during the first months. Senior students sign up for the role of mentor as an elective in communications. The mentor project is run by a couple of student assistants, who have been mentor before and supervised by a member of the scientific staff.

There are about ten students in each mentor group. The programme consists of lunch meetings with the mentor group once a week. Each meeting focuses on a specific theme. Table 1. gives an overview of selected themes. Of course, the group can propose other topics. In between the meetings social activities are organised.

Table 1. Themes for mentor meetings

Session 1	Introduction, getting to know each other
Session 2	Prior study experiences and the choice for the study
Session 3	Short time study planning
Session 4	Learning in lectures
Session 5	How to find information (visit to the library)
Session 6	Long term study planning
Session 7	How to prepare for an examination
Session 8	Learning styles. Making an inventory and discussing differences and similarities
Session 9	Ambitions. What do you want to achieve after graduation?
Session 10	Evaluation. How did you do in the first semester and what did the mentor group do for you?

Aerospace Engineering

- Student-Mentor is also Project Tutor

At the faculty of Aerospace Engineering the tasks of the mentor and that of a project tutor are combined. Upon recruitment, a group of senior students (third year or higher) is trained in group dynamics and communication skills. A staff member chairs regular briefings and gives the student assistants feedback on their job performance. In their role as mentor in the first semester the student teaching assistants have to explain the set-up of the educational programme and make sure the students in their group learn to find their way in the faculty. Also they must help the students in their group to develop efficient study behaviour. In their role as project tutor in the first semester they are to act as guides for the excursions and they supervise the work at the first practice exercises.

During the second semester the teaching aspects of the task become more important. The student assistants act as coaches for the project work. Monitoring the group process is their primary concern. If called upon they also must be able to give feedback to group on their decisions and answer questions related to the assignments. Also the project coaches play an important role in the assessment of the participating students. They have to mark assignments and reports submitted by the students in their group. Obviously, for these tasks sufficient understanding of aerodynamics, mechanics & constructions is a prerequisite.

Technology Policy and Management

- Student-Mentor Plus Staff-Mentor

The mentor system for first year BSc students at the Faculty of Technology Policy and Management (TPM) has been improved and extended in the Academic year 2005-2006. The duration of the programme has been extended to cover a full year and in the new system both a student mentor as well as a mentor from the staff guide the groups. The programme introduces a variety of activities and should result in a Personal Activities Program (PAP). A short training is organised to prepare both the teachers and the students for their role as a

mentor. The Faculty study consultant manages the program. In between the groups meetings, a plenary meeting is organised six times a year, to share experiences and discuss current issues, chaired by the study consultant. All mentors are expected to be present at these meetings.

The Mentor-groups meet every two weeks supervised by their two mentors. The Student mentor is expected to be present at all meetings, the staff member at least once a month. During the first semester the primary objective is socialization and exchange of information about the Faculty and the study programme. Towards the end of the semester the groups can also practice exams together. By the end of the semester every student has to complete the first draft of the PAP. The staff mentor discusses the PAP with all students individually.

During the second semester the attention shifts towards problematic study behaviour. The role of the mentor changes, into one looking more like that of a tutor, helping the groups with their homework and learning how to study. Students with serious problems are referred to the study consultant. At the end of the programme the students have to update their PAP. The staff mentor again discusses the PAP and the expected Advise (Based on the examination results, the Year manager formally brings out and advise for every student on the continuation of the study.

Analyses

The objective of all mentor systems is to facilitate the transfer from secondary education to the University. This is based on the assumption that freshman students fail in their study, not because of insufficient cognitive competence, but because of behavioural problems and a lack of study skills. The loss of the familiar social environment is thought to play an important role. Consequently, the mentor programme aims to provide the students with a new peer group.

Following the basic mentor group model (Snippe, 1997), the mentor programme at the Electrical Engineering, Mathematics and Computer Science provides just a social safety net and a series of study skills exercises. The students get no other reward for participation than the company of the fellow students. The effects of the programme vary strongly per group. Some students cease to come to the group sessions, or do not participate seriously, because they feel they do not need such a support for their social live. As a consequence, some of the groups fall apart before December. On the other hand there are also groups that continue after Christmas on their own, sometimes even meeting each other long after the first year is finished.

It is difficult to establish a clear cause-and-effect relationship between participation in the mentor group and study success. There are too many possible causes for dropping out. For instance, in some cases, participation in the mentor group may result in the student realizing the choice of study was not the right one (in the mentor training it is always explained that the goal is not to keep everyone on board; Rather, the mentor should help the members of the group to become aware of the consequences of their choices). As a consequence, a decrease of the dropout rate (the secondary goal of the programme) cannot be applied straightforward as a criterion of success.

Participation in the mentor programme, however, is a necessary condition for any potential effect. Aiming to enforce participation, the mentor programme of the Faculty of Aerospace

Engineering integrates teaching tasks in the first year project work with the social function of the mentor groups. In the beginning of the year the mentor role is the most important, following a programme similar to that of Electrical Engineering, Mathematics and Computer Science. Gradually, the Student mentor also assumes the tasks of a teaching assistant, including the grading of some aspects of the group performance in engineering projects. As a result all students feel compelled to participate in the programme (absence from the project group sessions has to be compensated).

The mentor programme of the Faculty Technology Policy and Management proposes a different approach to ensure maximal participation in the mentor groups. Instead of enforcing the role of the student mentor with teaching responsibilities, a mentor from the teaching staff is added to each group. The introduction of the Personal Activities Program helps to focus on study skills and awareness of the study choice.

Both integrative strategies result in more intense participation in the respective mentor programme. Both programmes also involve a higher investment in terms of time and money. Integration in the educational programme justifies the extra cost and appears to be most natural. Assigning mentor tasks to the teaching staff is even more expensive. An extra advantage of the involvement of the teaching staff, however, is that personal contact with teachers motivates the students. Also this clearly underscores the importance of the mentor programme.

References

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