

Differences Between the Groups in a Formal Tutoring System

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INTRODUCTION

This study has been done in Aalto University, School of Electrical Engineering. Three classes, started 2008, 2009 and 2010, were followed during their first years of studies. This paper is based on statistics and information given by the tutors of the groups and no student has been interviewed so far.

The main reason why this study was done is that we had already noticed that some groups of students have succeeded better than others and there have been differences between the groups. The main target was to find out if the action of a tutor is in the main contributor to student's success or failure in their studies. We wanted to know if a tutor is in a main role. Also, what kind of meaning or correlation the number of meetings with a tutor, the motivation of a tutor and the quality of the meetings have in the studies of one student and a group of students. We would be interested in to see if the results are the same in other universities but we have not found close enough tutoring systems yet.

Tutoring is widely used in universities and also in working life [1] all over the world. Some universities give tutoring as a voluntary option and have special tutoring programs for their first year students [2] and some universities expect all their first year students to take part in it. Sometimes tutoring can be very well organized and would be useful for students but no one uses it because they do not have to [3]. Tutoring has been under the research mostly in the universities with a special mentoring program and many surveys has been done [4][5][6].

In this paper and in our university all tutors are staff members of the school and have a higher university degree. Some tutors are professors but most of them are post-graduate students and research scientists. There are also senior students acting as tutors or mentors and we call them peer tutors in this paper. The most important difference between a peer tutor and a tutor is that a peer has the same social standing and a peer group is made of people with the same status. Peer tutors can be, for example, students from a similar age or educational level. When using peer

assessment, other students in a class are grading the work of their peers. It can also include feedback to peers. These assessments can be used as a part of formal grading but they can also be only a portion of the feedback of students. Peer learning is a way to lower a teacher's or tutor's work load and give attention to students. [7] In our university peer tutors are second or third year students. Their task is to lead new students to student's life, introduce the campus and help to find students' daily needs during the first months. Peer tutors do not concentrate on study problems and usually this tutoring is very short time. A peer tutor may have some kind of influence on the group and how it is working.

1 GROUPS, MOTIVATION AND SUPPORT

At the first day in our school the students are divided into groups of 6-10 students depending on how many tutors we have in use that year. Most of the groups are 9-10 students. Our international students have their own group and native Finnish and Swedish speaking students are divided into the groups so that everyone has a tutor who speaks the same native language. Another way the groups are formed is by choosing random students where the groups do not correlate with earlier studies, the high school of origin, student gender or anything else.

Every group has its own tutor. The tutors have an opportunity to take part in a two-hour meeting and get guidance for tutoring but they do not have to join it. It means that most of the tutors do not have any kind of training for tutoring new students. Some of the tutors do have some level of pedagogical studies and do have some kind of background information on how to do tutoring. In brief, our tutors are not trained for this challenge but do have support if needed.

Every group also has a pair of senior students, peer tutors, who can lead the students in students life and in the rules and practices in our university, either in a good or in a bad way. The purpose of the peer tutors is to help the first year students in their everyday life such as finding lecture halls, offices, students restaurants and knowing the rules of the campus. The peer tutors have a huge impact on how the first year students see their university and the beginning of their studies. The first year students usually spend many hours in their first weeks with their guides and may learn some good practices. The peer tutors have one day preparation and training for their task and they know what the school is expecting them to do with the first year students. On the other hand, there is not any clear and certain system how to control the actions of the peer tutors.

In our school tutoring is compulsory for all the students during their three first years of studies that is their bachelor degree.

In this study, the tutors guiding their groups of first year students were interviewed after the school year 2010-2011. We asked how many times a tutor has had a group to guide, how many meeting they had, did they have a personal meeting with every student or only group meetings, how many students were attending the meetings and how a tutor would describe the content and atmosphere of the meetings. 8 of 14 tutors answered to all questions. The tutors did not work equally and for example the tutors for the students who started in 2010 had different styles to help their group. Some groups had as many as six group meeting with their tutor during the first year and some groups had only two meetings. We do not know how many times, if any, the groups have met without their tutor. Some groups may have met several times per week because they all should have very similar schedules for the first year of their studies. The real cooperation and the amount of time the students are really spending together is still a mystery and almost impossible to sort out. We have not

had an opportunity to interview the students and see how much and what kind of communication they have in their groups without their tutor.

The number of meetings with a tutor did not correlate with the mean value of the grades or the number of study credits. If a tutor has an impact on a group, it is more quality-based than quantity-based matter. On the other hand, we found that the success in one group is equal. Tutors had several opinions why some groups succeeded when interviewing some of them in our school and in some other universities in Finland. It is shown that if a first year student feels himself welcomed and supported but also challenged enough it makes him want to get ahead [8]. Accordingly it is important to motivate and support the students in the beginning of their studies and help them to motivate themselves thereafter. Keeping the motivation high was also the most common answer in our interviews. Tutors did not have an idea what is the best way to do it but it was clear that one of the most important tasks for the tutors is to motivate their students. Tutors also thought that having their class and knowing other students studying in the same class helps students. It creates a sense of belonging. Also, the purpose of the peer students was mentioned as a notable part of successful studies. The tutors did see it as a peer help where the other side has more knowledge. Peers in any forms was mentioned several times in the discussions.

2 STATISTICS

In 2008 and 2009 we had 13 groups and in 2010 14 groups of students. Some statistics of an academic performance of the students who started in fall semester 2008 is shown in *Table 1*. All 13 groups are separated and a mean value of studies and an average amount of credits are shown. As it is can be seen, some groups succeeded better than others. The variation between the groups is not massive but for example the difference between the mean value of studies in the most and the least successful group is more than one grade. Also, the best group has earned almost 100 study credits more than the weakest group only in 3.5 years. It is easily calculated that they have studied over 14 study credits more per semester when 3.5 years equals seven semesters. Because of the anonymity of the students it is not possible to show the exact statistics per student inside a group but the statistics have shown that there are not larger differences inside the groups when looking at the number of study credits and the mean value of the grades. Almost all members in one group are getting good grades and passing courses or most of them are struggling in their studies. There can be one exception in a group but usually not two exceptions. In this case it can be said that the success in a group correlate with the success of a single member of a group.

Table 1. Statistic of credits and mean values of students who started in year 2008.

Groups started in year 2008	Mean value of studies	Average amount of credits
1	3.38	172.70
2	3.46	168.20
3	2.27	85.87
4	3.37	182.40
5	2.87	167.50
6	3.35	152.80
7	2.56	147.00
8	3.38	181.80

9	3.49	185.50
10	3.13	153.50
11	2.40	140.60
12	3.32	122.60
13	2.84	131.60

The statistics of the students who started in the year 2009 are shown in *Table 2*. When comparing the most successful and the least successful groups we can see that the difference between the mean value of studies is 0.74. It is a bit less than the same number among the students who started in the year 2008 but it is still quite high. We can also see that the most successful group has studied on average 47.65 study credits more. It makes the difference between the strongest and the weakest group to be 9.53 study credits per semester, on average. These groups have studied five semester before this survey.

Table 2. Statistic of credits and mean values of students who started in year 2009.

Groups started in year 2009	Mean value of studies	Average amount of credits
1	3.39	127.60
2	3.45	129.00
3	2.80	103.40
4	3.33	124.10
5	2.91	96.95
6	2.65	94.13
7	2.88	104.90
8	2.83	99.33
9	3.10	107.00
10	2.99	121.50
11	3.32	91.35
12	3.24	139.00
13	3.01	111.20

Table 3. Statistic of credits and mean values of students who started in year 2010.

Groups started in year 2010	Mean value of studies	Average amount of credits	Average amount of credits without the lowest value
1	3.16	74.44	84.64
2	3.51	74.56	81.00
3	2.76	44.63	50.29
4	2.66	66.38	75.57
5	3.46	79.39	80.88
6	3.66	79.75	89.00
7	2.89	66.13	70.00
8	3.72	67.40	73.56
9	2.92	60.57	64.17
10	3.35	70.32	73.90
11	3.17	48.00	52.67
12	3.27	60.56	68.93
13	2.64	61.06	65.69

14	2.82	64.11	71.00
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In *Table 3* is shown the results of the students who started in 2010. They have studied 1.5 years that is three semesters. We can see that the results do not change radically when dropping the weakest student of the group out of the calculation. Even after only 1.5 year of studies the difference between the mean value of studies in the most and the least successful group is a bit more than one grade. The best group has achieved over 35 study credits more than the least active group. In this case it means almost 12 study credits more per semester.

Another problem that came to daylight when looking at the statistics is that a bachelor degree in Aalto University consists of 180 European Study Credits (ECTS). The degree should be taken in three years but it is easy to see that the number of credits after 3.5 years are mostly not over 180 when looking at the students who started in the fall 2008. It means that most of our students cannot graduate in three years. We will not concentrate on that problem in this paper but it is important to notice that even the best groups are not too good and are not studying in an expected time.

When concentrating on the class of the year 2009, we noticed that after the first 2.5 years, on average one member per group had either disappeared or changed the school. The class of the year 2008 showed that after 3.5 years already 2 students per group did the same, on average. Many of those students changed the school inside the university and continued their studies normally. We do not have any statistics on where the disappearing students went and why they stopped their studies. The students who disappeared were not only in the groups of the lowest mean value but also in the more successful groups.

But what makes the biggest difference between the groups? It is important to notice that even if groups in this study are studying together and students are helping other students in their group, all grading, evaluation and feedback in every course are done individually. In all bachelor level courses students are individuals and graded as individuals. It means that they have decided to study in groups and are doing it voluntarily. Members of a group have to cooperate fluently and effectively if they want their group to be successful. In the case of studies, students may also find the situation more competitive than cooperative. Even when the group is successful, competition can create negative effects. [9]

The only explanation we can give is that the students are supporting other students in their group. Something is happening inside a group but it cannot be seen without interviewing them.

3 SUMMARY AND ACKNOWLEDGMENTS

We have now shown some statistics of our students and analyzed the difference between the groups. Some guesses are given and the big differences are noticed but no proven theories have been found yet. It is shown that it is mostly not about the tutors but about the students in a group. The next target is to interview as many students as possible and try to get a better picture why some groups manage to succeed better than others.

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