

TUTORIAL ATTENTION MENTOR PROGRAM: TUTORING STUDENTS

Ana M. Portillo de la Fuente¹, Marisa Fernando Velázquez², M^a Ángeles Pérez Rueda³, Cristina Pérez Barreiro⁴

^{1,2} *Dpto. Matemática Aplicada, University of Valladolid (SPAIN)*

³ *Dpto. of Mechanical Engineering, University of Valladolid (SPAIN)*

³ *Instituto de la Tecnologías Avanzadas de la Producción (ITAP), University of Valladolid, Valladolid (SPAIN)*

⁴ *Dpto. Tecnología Electrónica, University of Valladolid (SPAIN)*

Abstract

When new students enroll in the university they undergo major changes, especially in the way they face their studies, as well as in the teaching methodology used by teachers. The current teaching methods place the student as the protagonist of their learning. This requires more autonomous work and commits the university to create systems of support and guidance to the student (point 4.3 of the Annex of Royal Decree 1393/2007 of 29 October, which requires the existence for grade studies "Accessible systems Support and guidance of students once enrolled "). This communication presents the work carried out to date in the implementation, for the first time, of the Tutorial Attention Program, called "MENTOR Program", addressed to all new students of the Industrial Engineering School (Eii), of the University of Valladolid (UVa), based on tutoring between students.

Keywords: Tutorial Attention, Educational Innovation, Transversal Competences, Social Responsibility.

1 INTRODUCTION

Our team is made up of 25 teachers from the School of Industrial Engineering of the University of Valladolid with teaching in the different degree programs of Eii, different departments and areas of knowledge. During the course 15-16 and within the corresponding call for UVa Projects of Educational Innovation (PID), we designed a Tutorial Attention Program (PAT) called "MENTOR Program", to help the new students of our center, to adapt to the university environment. Our School presents peculiar difficulties for new students: many degrees, complex schedules, three venues. That is why we thought it is important to introduce this "MENTOR Program" based on peer tutoring. Last courses students, "Mentors", supervised by teachers, "Tutors", guide and advise a group of new students, "Tutored", to assist them in their incorporation to the Eii, and contribute to the success of their grade studies. In addition, this program is also intended for Mentor students to develop transversal competences such as leadership, communication, social skills and teamwork.

During this course 16-17 we have started this "MENTOR Program". A time was devoted to dissemination by means of posters advertising the program. The conditions that were required to be Mentor, the obligations of this role and the benefits that could be obtained were published. A deadline was set (April / May 2016) for students in the Eii higher courses to sign up as Mentors. Finally, there were 31 Mentors who, in September 2016, were given two training courses to assist them in their work: one on leadership, communication and teamwork, and another on the UVa and Eii performance. The 31 Mentors have attended 12 groups of Tutored students and have been supervised by 15 Tutor teachers. There have been 5 meetings of the Mentors with their respective groups of Tutored, to discuss subjects that help their incorporation into university life. In the preparation of these meetings, the Mentors have been guided by their corresponding Tutors.

February 17 was set as the closing date of the MENTOR Program of course 16-17. That day we celebrated an event where the Mentors were given certificates of participation in the program. In addition, we took advantage of it to be an exchange of experiences and to acknowledge the work of Mentors, essential to carry out this program.

To know how the project has worked and to be able to improve the design and implementation for the next course, we have produced three surveys that have been filled out by the different actors: Tutored,

Mentors and Tutors. Analyzing the results we will be able to propose actions that improve the quality of the Project for the next course.

2 METHOD OF WORK IN THE IMPLEMENTATION OF THE PAT "MENTOR PROGRAM" DURING THE 2016-2017 COURSE

As it has been pointed out previously, a team of 25 teachers with wide experience in teaching innovation participates in this PID, with teaching in the different degrees of Degree of the Eii, of different departments and areas of knowledge, reason why it is a project based on the coordination and it has an interdisciplinary nature. This teaching team focused mainly on the permanent formation of its members, on consolidation as a team and on social responsibility with our educational environment.

The main objectives proposed by this PID1617_46 are:

- Implement, for newly enrolled students in Eii, the peer tutoring system designed during the previous course (in PID1516_50) that will facilitate their incorporation into the university environment and help them to succeed in their studies.
- Complete and improve the student tutoring system designed in PID1516_50 to improve its implementation in the 2017-2018 academic year and consolidate it in our center.

In order to achieve these initial objectives we have worked in groups:

- Tutors Group: this group comprised 15 members of our PID who have acted as Tutors during the implementation of the PAT in the 2016-2017 academic year.
- Surveys Group: this group was formed by 6 members of our PID who have been in charge of elaborating three surveys to fill out by Tutored, Mentors and Tutors to know their opinion on the PID1617_46, and to analyze the answers to draw conclusions.
- Dissemination Group: this group comprised 5 members of our PID who have been in charge of designing different documents necessary in the implementation of the PAT and of updating the media used in the 2016-2017 academic year for the next year.

Given the large number of new students at our School, we propose the orientation of Mentors to Tutored not in a mandatory or personal way, but in groups, attending 2 or 3 Mentors to each group of first course of the degrees that are taught in our Center.

There have been 12 tutored groups that we describe next with their corresponding grade and group code:

- Degree in Industrial Design and Product Development (GDlyDP, D1): 3 Mentors and 1 Tutor.
- Degree in Industrial Design and Product Development (GDlyDP, D2): 3 Mentors and 1 Tutor.
- Degree in Electrical Engineering (GIE, E): 3 Mentors and 1 Tutor.
- Degree in Industrial and Automatic Electronic Engineering (GIElyA, EA1): 3 Mentors and 2 Tutors.
- Degree in Industrial Electronic and Automatic Engineering (GIElyA, EA2): 3 Mentors and 1 Tutor.
- Degree in Mechanical Engineering (GIM, M1): 2 Mentors and 1 Tutor.
- Degree in Mechanical Engineering (GIM, M2): 2 Mentors and 1 Tutor.
- Degree in Mechanical Engineering (GIM, M3): 2 Mentors and 1 Tutor.
- Degree in Chemical Engineering (GIQ, Q1): 3 Mentors and 1 Tutor.
- Degree in Chemical Engineering (GIQ, Q2): 2 Mentors and 1 Tutor.
- Degree in Engineering in Industrial Organization (GIOI, O): 3 Mentors and 2 Tutors.
- Degree in Engineering in Industrial Technologies (GITI, T): 2 Mentors and 2 Tutors.

In general, Mentor students attended a group of Tutored from their own degree and / or their own venue (it has not always been possible). The same has been tried with the teachers Tutors.

During the 2015-2016 academic year the design of this MENTOR Project was carried out (see [1], [2], [3]).

Five Mentors-Tutorized meetings were planned to be carried out in the first term of the next academic year and one more in the first week of the second one. The meetings were scheduled to take place on the following Friday: September 16, September 30, October 14, November 4, November 25, and February 10. The schedule set for those days was at 12 o'clock for the groups of morning time and at 7 o'clock for the groups of afternoon. This schedule was raised because the two time slots (Friday: 12 noon to 2 p.m. and 7 p.m. to 9 p.m.) undergo teaching activity, so that neither Tutored students nor Mentor's have teaching obligations; but it has been problematic in many groups for several reasons: the previous hour the Tutored students had no class, or the group was divided into different classrooms ... This has forced, both Mentors and Tutors, to look for another gap in the schedule of each first-year group. In general, the expected week has been maintained.

Table 1 lists some of the topics covered and tasks at each Mentor-Tutored meeting.

Table 1. Schedule Mentors-Tutored meetings.

DATE	TOPICS TO TALK ABOUT
16/09/16	<ul style="list-style-type: none"> • Presentation of Mentors, Tutor and PAT_Mentor • My arrival to first course. • Know the services of the Eii: Library, Direction, Subdirectories, Administrative Secretariat, Hall of Acts, Recording, Aula Magna, parking bikes. • The Web of the Eii: schedules, dates of exams, news. • Indicate the existence of two venues in the Eii. • Moodle platform. Existence of official mail of the UVa for each student, with him they will maintain contact with the Mentors.
30/09/16	<ul style="list-style-type: none"> • Ask about the task: has it been difficult, interesting? Have they got it? • Activities of the UVa: sports, cultural. • Class delegates: credits obtained, to be able to be a delegate. • Student representation. • Student Associations.
14/10/16	<ul style="list-style-type: none"> • Ask about homework: have you found any activity that interests you? • Plan of study: subjects, practice in company, TFG, teaching guides. • Tutoring (on the website of the School). Encourage use tutoring. • Tell them to study daily. • Departments, laboratories: where they are.
4/11/16	<ul style="list-style-type: none"> • Ask about homework: what tutoring have they attended? How has it been? • Academic Regulations: <ul style="list-style-type: none"> ➤ Norms of progress and permanence. ➤ Examination and evaluation. ➤ Recognition of credits: credits for cultural activities, sports, student representation and cooperation, General Catalog of UVa.
25/11/16	<ul style="list-style-type: none"> • Ask for homework. • Student mobility: Erasmus, SICUE, when to apply and requirements (language level). There are informative talks. • Ask them how they are going. Encourage debate. • Announce last meeting in February. • Pass a survey to the tutored to see if the objectives of the mentoring have been fulfilled.
10/02/17	<ul style="list-style-type: none"> • Ask about Test results. • Close and say goodbye.

The first term weeks selected have been unsuccessful. On one side, the first meeting was held 10 days after the course began (the Tutored no longer needed as much help as in the beginning) and, on the other hand, the meetings have been very distanced from each other. As a result, Tutored attendance was reduced. To solve this problem a little, in some groups it was decided to eliminate the last meeting (gather meetings 4 and 5). The second semester meeting was maintained, although with a change in the topics to be discussed

In the following sections we will explain the work done by each working group of the MENTOR program.

2.1 Tutors group of "MENTOR Program" during the 2016-2017 academic year

2.1.1 Tutors-Mentors Meetings

Before each Mentor-Tutored meeting, the Mentors met with their Tutors. At this Tutors-Mentors meeting, Tutors guide and advise their Mentors in the preparation of their Mentor-Tutored meeting. The Tutors were required to complete the minutes of meeting. This record included basic matters such as Tutor and Mentor names, degree / group, date and time, place and duration.

With this data we can display for example Table 2, about the duration of the meetings. The empty cells indicate that this information is not reflected in the corresponding minutes.

Table 2. Duration Tutors-Mentors Meetings.

Tutors-Mentors Meeting time					
Group	Meeting 1	Meeting 2	Meeting 3	Meeting 4 and 5	Meeting 6
D1	1 h	45 min	1 h	1 h	
D2					
E	50 min	40 min	40 min	40 min	40 min
EA1	1h 35min	1h 15min	30 min	45min and 30min	30 min
EA2					
M1	20 min	20 min	6 min		
M2	45 min	55+40 min	35 min	30min and 60min	45 min
M3	1 h				
O	1 h	30 min	30 min	1h and 40min	
Q1	1 h	1 h	1 h	30 min	
Q2	30 min	10 min	20 min		20 min
T	30 min	30 min	30 min		30 min

The average time spent by the Mentors at each meeting with their Tutors is approximately:

1st: 50 min, 2nd: 34 min, 3rd: 26 min, 4th and 5th: 44 min and 6th: 28 min.

The Minutes also included: subjects dealt with (almost always the topics on the schedule) and observations and incidents.

Among the observations and incidents pointed out by the Tutors in the minutes of the Tutors-Mentors meetings we can point out: look for a better time for the next Mentor-Tutored meeting, prepare meetings together of different groups but of the same degree, and how to do the following Meeting with warders more interesting to increase the attendance.

2.1.2 Mentors-Tutored meetings

After each Mentors-Tutored meeting, the Mentors were required to complete the minutes of meeting. This record included basic topics such as the name of the mentors, degree / group, date, time, classroom and number of attendees.

With these minutes we can know the evolution of the number of Tutored students who have attended each meeting (Table 3).

Table 3. Number of Tutored attendees to Mentors-Tutored meeting.

Group	Number of Tutored attendees				
	Meeting 1	Meeting 2	Meeting 3	Meeting 4 and 5	Meeting 6
D1	16	0	20 (D1-D2)		12 (D1-D2)
D2	18	6			
E	28	28	23	21	23
EA1	43	3	0	2 and 3	4
EA2	11	8	5	3 and 6	6
M1	30 - 40		11	11 and 4	4
M2	12	7	3	0 and 5	5
M3	7	22	4	5	6
O	35	1	17	15 and 9	6
Q1	16	2	0	0 and 11	14
Q2	0	7	4	4	2
T	33	13	5	7	5

The total number of Tutored attending each meeting is:

1st: 249-259, 2nd: 97, 3rd: 92, 4th: 68, 5th: 75 and 6th: 87.

Minutes permit also knowing the duration of the meetings (Table4).

The average time spent by the groups at each meeting is approximately:

1st: 40 min, 2nd: 30 min, 3rd: 30 min, 4th and 5th: 30 min and 6th: 20 min.

The minutes also included: topics raised by the Mentor (almost always the topics planned in the schedule), topics and observations raised by the Tutored and incidents.

Among the topics raised by the Tutored we can point out: validations, doubts about schedules, need for languages, sports in the University, associations, doubts about subjects and how to study.

Among the observations and incidents recorded in the minutes we can point out difficulty in finding free hours to meet and little attendance from Tutored.

Table 4. Duration of Mentors-Tutored meetings.

Group	Mentor-Tutored Meeting Time				
	Meeting 1	Meeting 2	Meeting 3	Meeting 4 and 5	Meeting 6
D1	30 min	0 min	20 min		15 min
D2	30 min	5 min			
E	30 min	15 min	15 min	10 min	15min
EA1	45 min	40 min	0 min	45min and 30min	20 min
EA2	20 min	40 min	45 min	35min and 35min	25 min
M1	20 min		20 min	15min and 15min	45 min
M2	45 min	45 min	30 min	0min and 1h	20 min
M3	20 min	35 min	20 min	20min	20 min
O	1 h 15 min	45 min	1 h	1h and 40min	20 min
Q1	1 h	30 min	0 min	15 min	10 min
Q2	0 min	30 min	30 min	30 min	30 min
T	50 min	45 min	45 min	45 min	15 min

2.2 Surveys Group of the "MENTOR Program" during the 2016-2017 academic year

This group has been responsible for preparing a survey for each group (Tutored, Mentors and Tutors), and analyze the results collected. The objective of these surveys was to know that opinion about the MENTOR Program, its implementation, the fulfillment of its objectives and things need to be improved for later implementations. The three surveys were designed in a similar way, although with different number of questions. They had a first block of closed questions, scoring between 1 and 4 (from totally disagreeing to fully agreeing), and another open block of questions. Finishing with the request to score, overall, between 1 and 10, the MENTOR Program.

- Tutors survey has been answered by all tutors: 15.
- Mentor survey has been answered by all mentors: 31.
- Tutored survey has been answered by 95 new students.

In the survey carried out on Tutors, Mentors and Tutored, questions were included that affect the evaluation of common aspects, in order to be able to analyze the different perception that the three groups have of the Mentor Program, since there can be points of view completely different. We emphasize that the statistical analysis that has been performed in this project is not an inference, it is an analysis of the answers collected. In this sense, a comparative analysis of some of the results obtained in the closed questions as in the open questions, common to the groups, is shown below.

2.2.1 Comparative Tutors-Mentors-Tutored in closed questions

In Table 5 we have displayed the answers for common closed items in the three groups of surveys.

The mean results for these items are shown in Figure 1.

Table 5. Common Items in Surveys.

Tutor's Questions	Mentor's Questions	Tutored's Questions
1. The topics discussed at the meetings are of interest to new students.	1. The topics discussed in the meetings with my Tutored have been of interest of them.	1. The topics discussed in the meetings with my Mentors have been of interest to me.
2. Meetings with my Mentors have been long.	2. Meetings have been long.	2. Meetings have been long.
3. I have solved without problems the doubts raised by my Mentors.	3. I have solved the doubts that have raised my Tutored	3. My Mentors have solved my doubts.

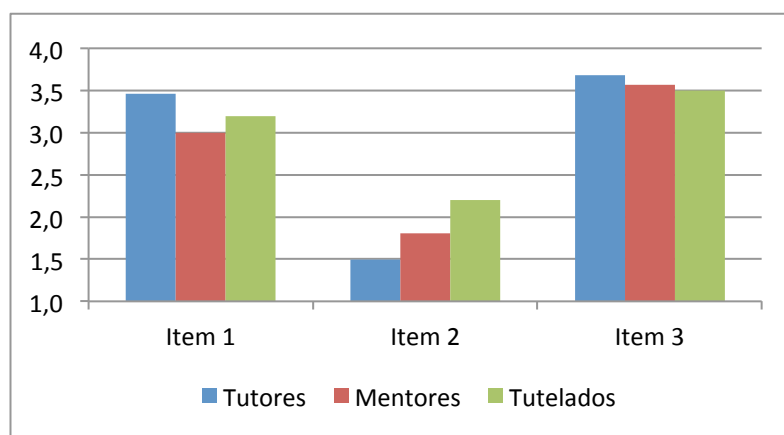


Fig. 1: Comparison of Tutor / Mentor / Tutored valuations.

2.2.2 Comparative global assessment of the MENTOR Project

As shown in Figure 3, the average overall assessment of the Project is between 7 and 8 points in all three groups.

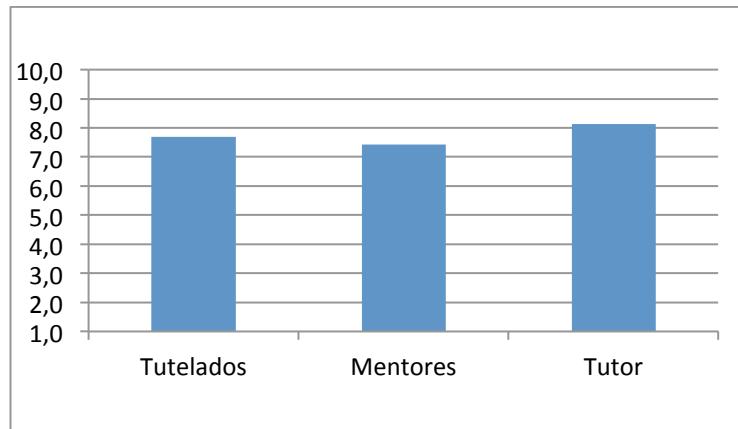


Fig. 2: Overall rating of MENTOR Project by groups.

2.2.3 Comparison of common open questions to the three groups

This analysis will focus only on the proposed matches.

1.- Indicate, if it is the case, any subject discussed in the meetings of the Mentors with their Tutored that you consider not necessary.

Tutors - Mentors - Tutored: do not indicate any common theme that is not necessary.

Mentors - Tutored: organization of the University and subjects of higher education (TFG Degree Final Project, company practices and Erasmus).

Mentors - Tutors: 19% of the mentors and 100% of the tutors state that all the topics covered are necessary. Also in a group they agree that the task that is proposed to the Tutored in each meeting is left over.

2- Indicate, if it is the case, any subject that you consider interesting and has not been discussed in the meetings of the Mentors with their Tutored.

Tutors - Mentors - Tutored: there is no common theme missing. The subject is indicated by the three groups but with different approach.

Mentors - Tutored: credit operations, how to study, talk about subjects and teachers.

Tutors - Mentors: languages.

2. Indicate some positive aspect of this Mentor Project.

Tutors - Mentors - Tutored: to help guiding the new student in the University and solve their first doubts.

Mentors - Tutors: to facilitate the learning of basic aspects of the University and usefulness of the project for new students.

4.- Indicate some aspect to improve this Mentor Project, along with its possible improvement.

Tutors - Mentors - Tutored: start the meetings earlier, better schedules and encourage the participation of the Tutored.

2.2.4 Comparison of common open questions in Mentors-Tutors

This analysis will focus only on the proposed matches.

5.- Has the number of Mentor meetings with your Tutored been adequate? If not, indicate how many you would consider appropriate.

Most Mentors (71%) believe that this has been an adequate number.

Most Tutors (60%) consider it better to reduce to 3 or 4 meetings.

6.- Have the scheduled dates for each Mentor meeting with your Tutored been appropriate? If your answer is no, indicate what dates would be preferable.

A large majority of Mentors (81%) consider that the scheduled dates have not been adequate, considering the date of the first meeting (consider that it should be the first week of the course, not so late) and Friday.

Most Tutors (80%) believe that they are not suitable dates. Everyone agrees that the first meeting should be the first week the course, some even indicate on the first or second day of class.

7.- Does the guidance and proposed recommendations of Tutors for each Mentor meeting with their Tutored feel useful to Mentors? If you think it is appropriate, indicate what format you would propose to improve the meetings.

A large majority of Mentors (74%) consider them useful, indicating them as a basis, support and guidance.

Most mentors (87%) believe that guidance and recommendations for each meeting have been helpful to Mentors, although in several opinions it is added that Mentors have been free to adapt to their mentoring group.

8.- Do you think Mentors have developed transversal competences (oral communication, leadership, group work) in their work as Mentors? For this development, would it be better to be a single Mentor per Tutored group?

All the Tutors agree that the Mentors have developed transversal competences, they have seen a positive evolution to them as it advances in the number of meetings with the Tutored ones, with more freedom, confidence in themselves. It has been a very satisfying experience for Mentors. There is also agreement that it is better to have several mentors in each tutored group. It is proving very difficult for mentors to reach out to first graders, who usually do not stay in meetings, it is easier for them to do so among several. They are supportive and therefore can even favor the development of those competencies by having more confidence. It is proposed for degrees with more than one group, that two / three mentors working together with other groups is a good number; for degrees with only one group a minimum of three mentors seems more suitable.

Most Mentors consider that they have developed transversal competences and consider that it is good to be with more mentors and do not consider that only each mentor would no longer develop these competences.

2.3 Dissemination group of the "MENTOR Program" during the 2016-2017 academic year

The dissemination group has been in charge of designing the certificates delivered to the Mentor students and the invitation to the closing act of the MENTOR Program. Figure 4 shows, by way of example, the invitation.



Los miembros del Proyecto de Innovación Docente "Proyecto de Atención Tutorial MENTOR para la Escuela de Ingenierías Industriales" te invitan al acto que pondrá el cierre al citado proyecto en su edición del curso 2016-2017.

La celebración tendrá lugar el próximo viernes, 17 de febrero, a las 12h, en el Aula P31 de la Sede Francisco Mendizábal, de la Escuela de Ingenierías Industriales. El acto consistirá en:

- Puesta en común como Estudiante Mentor.
- Entrega de Certificados.

Las coordinadoras del Proyecto: Marisa Fernando y Ana Portillo

Si no puedes asistir, por favor, comunicalo en la dirección marisaf@mat.uva.es



Fig. 3: Invitation to Mentors at the MENTOR Program closing ceremony.

They have also been in charge of designing the new campaign of diffusion of the MENTOR Program for the 2017-2018 academic year. They have essentially maintained the 2016-2017 designs ([3]) so that they continue to be identified with the same Program, but have changed the color expecting to communicate that the Program will not be implemented exactly the same way, but that it has been updated. As an example, Figure 5 shows the updated logo, which will appear on posters, flyers and documentation of the 2017-2018 MENTOR Program.



Fig.4: Logo of 2017 MENTOR Program.

3 CONCLUSIONS

The implementation of the MENTOR Program in 2016-2017 can be considered satisfactory:

- The working groups established between the members of the PID have worked properly in meeting objectives and being involved with the success of the project.
- Students who have participated as Mentors have fulfilled their obligations in a very remarkable way, have supported their Tutored, and have contributed ideas to improve the Project in later editions.
- Each of the three main groups of the Project (Mentors, Tutored and Tutors) have evaluated the project with a score between 7 and 8 (on a scale of 1 to 10).

Despite being satisfied with this implementation of the MENTOR Program, we have detected a crucial weakness that needs to be improved: little participation of Tutored students. In order to encourage more students entering our school to participate in the MENTOR Program, we will try to put in motion some improvement proposal suggested in the survey responses:

- Begin Mentor-Tutored meetings the first days of the course.
- Mentor-Tutored meetings are held closer together.
- The Project will be more visible (dates of meetings in the Center's hours, presentation of the project in the Welcome Day) for new students.

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We also thank the support received by the Eii management team in order to implement this Project in Eii.

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