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ASSESSING AN ACTIVE INDUCTION AND TEAMING UP PROGRAM AT THE UNIVERSITY OF CHILE.

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ABSTRACT: *In the form of an active induction program, a pedagogical innovation was introduced in the School of Engineering of the University of Chile. Apart from getting students in touch with engineering work since day one at school, the main goal of this experience was to strengthen ties and trust among peers. This was done through a series of work group exercises realized in a playful environment. A methodology was afterward designed to assess the impact of this induction experience in different domains. The application and comparison of survey questions to first year students –80% that participated in the experience and 20% that did not– and to second year students showed a significant positive impact of the experience on the relationship among peers and trust on Faculty authorities. The experience was described in a previous paper. This one focuses on the evaluation of it.*

KEY-WORDS: *Teaming up, Evaluation Methodologies, First-year induction, Active Learning.*

1. INTRODUCTION

As many Engineering Schools around the world, during the last ten years, the School of Engineering and Science of the University of Chile, the oldest and most prestigious[1] in the country, has been introducing a number of innovations in the management of the learning process, aimed at increasing the efficacy, the efficiency of the teaching and learning process, and also increasing the well-being if students. This has translated, so

[1] In the survey of engineering schools in Chile prepared by Qué Pasa magazine, the School of Engineering and Science of the University of Chile obtained the first place, with an average rating of 6.7 in an scale from 1 to 7.

far, into a significantly lower number of students failing courses, an increased retention and a decrease in the number of years to graduation. Since 2004, and based on the accumulated experience of the Department of Industrial Engineering, the School has been evaluating, designing and implementing pedagogical innovations that would complement the cognitive process –whose level of excellence is widely acknowledged- with the development of attitudes, skills and values required by the new global labour marketplace, especially teamwork and communications in increasingly diverse environments.

The Induction Program for New Students (about 550 each year) was implemented in an experimental fashion in March, during the week before classes started, as a way to face the challenges of the beginning of our six-year course of studies.

As it has been agued by several authors self-esteem is an important factor in engineering education performance (*Felder et al.2002)*. In the particular case of the School of Engineering and Science, the curriculum for the first two years is heavily biased towards mathematics and the basic sciences, delaying contact of the students with the engineering disciplines, increasing the lack of motivation of students that are not very keen on these basic subjects. A good way to counter this effect is to generate attitudes, feelings and skills favourable to team work, one of the main requirements of our era (*Pendergrass et al. 2001*). As any other skill, working in teams is learned by working in teams, learning to learn in teams, and this is the core of the induction program. In a previous paper (*Poblete et al, 2005*) on this experience we described the activity. We now present an evaluation methodology that was developed and applied to this experience. To let readers understand the situation, we borrow from this previous paper the description of the program.

2. DESIGN OF THE ACTIVITY

A main theme in the design of this experience was to encourage the creation of ties among students, and the development of skills that would help students throughout their years in school.

As mentioned before, the curriculum of the school lacks activities that would let students have an early contact with engineering work and their future as engineers. This led to the inclusion in the induction program of several hands-on activities that would help develop their interest in engineering since day one. Another important point in the design was to maintain a playful environment that would help students remain interested and enthusiastic. Finally, the inclusion of upper-year students as group leaders would improve communication, the creation of ties and increase confidence, by treating these team leaders as peers. In this way, we expected to generate a feeling of belonging to the school, leaving students motivated to participate in its work.

One of the key points in the design was how to keep students interested throughout the day. For this, it was decided to include an element of friendly competition in the activities, to encourage enthusiasm and to motivate them to stay until the end of the day. Therefore, each activity carried some number of points that would be added up at the end of a day to determine a winning team, which would receive a small price.

In order to ensure a quick process of trust and team building the students were invited to a guided process on getting to know each other as the first activity.

Activities actually took part in two days. Because of the large number of students, the first day was replicated three times, each with one third of the students (180 persons, approximately). Students were assigned randomly to groups of 15 persons each.

In the second day of activities, the whole contingent of students was gathered for a more traditional orientation, including a tour of the campus, group discussions to get their

evaluation of the previous day, and a formal welcoming ceremony by the Dean, ending with an informal lunch.

The main innovative exercises were included en the first day. They included:

- Welcome, explanation of the activities of the day, formation of groups and some time for people in each group to get to know each other (60 minutes).
- First Engineering Challenge, in team work. (90 minutes).
- Two team work exercises and one exercise to make students familiar with administrative school procedures (90 minutes).
- Lunch (60 minutes).
- Choreography (team work) (45 minutes).
- Final Technological Challenge in team work (150 minutes).

3. DESCRIPTION OF THE ACTIVITIES

All the activities had ingredients that encouraged team work and that tried to make students feel part of the School.

3.1. Activities related to school procedures

There are many things a new student has to do when he or she first arrives on campus that are often seen as not very exciting, but necessary. These involve chores like getting their computer account, making themselves familiar with the student services web portal, answering the social services questionnaire, etc. We designed activities that looked as challenges to be faced by the groups, which permitted them to gather points in the competition by getting all group members to fulfil these duties. Something that was usually boring became part of a game, and students helped each other in the process.

3.2. Playful activities to encourage teaming up.

Three of the activities focused mostly in trying to encourage students to work in teams, cooperate and communicate, without introducing elements of engineering work. The advantage of making this look like a game, in a protected environment, is that students feel safer to express themselves than in "real life". Furthermore, the playful environment fosters corporal attitudes and emotions that facilitate participation, creativity and, most importantly, trust.

In one of the challenges, called the "spider web", students face a challenge that can only be overcome by working as a group. Participants have to pass through the openings of a net without touching the strings, and no opening can be used twice. Time pressure and the need of physical support by their team mates force them to develop leadership, rapid and effective coordination and the trust in the support and the physical competence of their peers.

In the second challenge, called the "piranha river", the winning team is the one that is the first to move across a simulated piranha-infested river. Each group is given a limited number of stepping stones (small pieces of wood), always fewer than the number of group members. No one is allowed to touch the ground, and if this happens they have to start again from the beginning. This forces them to develop a strategy, leadership and trust, to avoid falling off.

After lunch, in the early afternoon when people naturally tend to feel less active, they had the "choreography challenge". Groups were merged temporarily to make teams of some 30 people, and each had 20 minutes to design, practice and finally perform a 2 minute musical choreography, to be judged by a jury, who would assign points to each team. This challenge became one of the happiest of the day, and prepared them for the final and most difficult technological challenge of the day.

These games achieved their purpose of encouraging participation and team work, letting students see the effect of trust, cooperation and effective communication when facing different challenges.

3.3. Activities to put students in contact with engineering work.

3.3.1. Civil Engineering Challenges

These activities took part in the Laboratory of Solids, Porous Media and Structures. The newcomers, grouped in teams, had to solve "toy" problems representative of real engineering cases, such as building beams of maximum span, water storage structures and reinforced slopes, using elements such as spaghetti, glue and paper.

In front of all students and professors, the solutions worked out by each group were experimentally evaluated through load tests and simulated seismic effects.

Students, with no exception, actively participated not only in the design of the solutions, but also in their construction with surprising motivation, talent and creativity, entirely satisfying the programmed goal.

It has to be mentioned that professors in charge of these tests were greatly impressed by the innate talent showed by the new students who reached valid solutions in subjects still technically unknown for them.

3.3.2. Final Technological Challenge

This activity was designed to end the work of the day, and its goal was to motivate the students to work in a number of problems related to technology, and in passing to get to know the campus.

These were the criteria used to design these activities:

- The whole activity should be performed in two to three hours.
- The whole set of activities must be replicable three times (because the cohort of students was split in thirds).
- Students should be able to work for themselves on the problems, with just a little help from team leaders.
- Activities should encourage cooperative work within each group, with an element of competition between groups.
- Ideally, activities should involve a number of different technological areas present in the Faculty, and let students become familiar with different labs and facilities.

The challenge was organized around a number of tasks that must be performed to achieve the final goal, which was to run a multimedia presentation in the South Hall of the main school building. When students succeeded in putting all pieces together, they were able to screen a video of a welcoming message by the Dean.

The challenge was to perform all sub-tasks that, when put together, allowed for this screening to happen. The sub-tasks were:

1. Energy supply,
2. Assembling a computer,
3. Decoding a video file,
4. Robots to transport key element,
5. Robot entrance ramp.
6. Projection screens,

Energy supply: This involved using electricity generators from a renewable resources lab and transporting this energy to the South Hall to power computers and video projectors. The solar and eolic generators were located in a different building. Students have to use batteries, transformers and wiring to transport electricity across campus.

Assembling a computer: This challenge consisted in getting each group to assemble a computer, using pieces found in a box. The computer was to be fully operational, to run the program that would play the video file with the welcoming message by the Dean.

Decoding a video file: Students have to use computers from the Numerical Lab to search the web for pieces of a file. To achieve this, they also had to physically visit the Library and learn how to find information there. To enter the Library they had to solve a mathematical puzzle and the file, when found, was encrypted with a key they had to discover.

Robots to transport key element: In this part of the challenge, competing groups had to assemble and program LEGO robots. The robots had to climb a ramp and then follow a path that would lead them to the South Hall, carrying some key element to screen the video file.

Robot entrance ramp: Students had to use carpentry tools and supplies to make the ramps to be used by the robots to climb to the South Hall.

Projection screens: Finally, students had to build and hang a big projection screen, and to install the computer and the video projector.

The maximum allowed time was 150 minutes. The small teams were merged in two super-teams for this challenge, and sub-groups of each team had to perform the sub-tasks in parallel.

In each activity, the professors responsible for them made an introduction, explaining the problems to be solved, that engineering disciplines involved and outlining some of the solutions.

Points were awarded using the following criteria:

- Mission accomplished

- Best group for each sub-task
- Best overall team

4. EVALUATION METHODOLOGY.

In recent times, there have been many experiences of pedagogical innovation in the field of engineering education. Evaluating their impact, in the short and in the long run, has not been an easy task. In conferences on engineering education this is one of the usual shortcomings that are discussed. Because of this, we have assigned an especial importance to the design of evaluation methodologies, in the context of the recently formed Group of Education Engineering at the School of Engineering and Science of the University of Chile.

In the case of this induction program, the methodology centered on the comparison of perceptions of the students that went through this experience to that of two groups of students that did not:[2]

- First year students that did not participate (classmates of the ones that did).
- Second year students (i.e., students that entered the school one year earlier, when this induction program did not exist).

Additionally, at the end of the induction program students were asked to fill a survey to measure their satisfaction in various areas. Also, they had a talk using a "cascade" methodology, that consists in begin with a personal reflection exercise, then conversations in 5 students groups, and after in 30 people groups. From this dynamic a consensus was obtained that was presented to the Faculty authorities. "Monitors" helped in the dialogues, that were done in a confidence environment, in which the students

[2] The programme was not mandated. However, the attendance was quite good (About 80%).

interchanged opinions, talked about their learning during the week, and finally about the expectations and hopes at the beginning of their engineer studies.

The focus of attention of our survey was to measure the perception of the quality of the relationship of students with their peers, with professors, with school authorities, staff and others[3]. We also included questions about the students' perceptions of themselves.

5. RESULTS AND CONCLUSIONS

5.1 Analysis of results

From the survey of satisfaction and the group discussions done immediately at the end of the induction program, we realized that what the students valued the most was the opportunity to get to know their classmates, the school, to feel valued and welcomed by the community, and to have a first contact with the challenges of engineering. It was remarkable that the expression used most often was "get to know", and the activities with the best evaluation were the two engineering challenges (structures and technology).

After reviewing the results of our survey, done six months later, the major differences were found in the three dimensions related to what we described earlier.

In the first place, we had a question about "relationship with their classmates". There is a significant difference for those students that feel that their relationship with their peers is "very good": 37% for students that attended the induction program, versus 29% for students that did not. Taking into account that both groups have been in school together for more than six months now, we observe that even students that did not attend seem to have benefited. In fact, when we compare to second year students, only 22% of them

[3] In the Social Capital Model of our Industrial Engineering Department, this means focusing on the relational capital. (Vignolo et al, 2003)

answer that their relationship with their peers is very good. Since these second-year students had already been in contact with their classmates for more than a year, it is reasonable to conclude that the real impact of the induction program is even higher than the fifteen percentage points we measured.[4]

TABLE 1: Results for the question "Overall relationship with your classmates".

Percentage of replies per level

Generation	Participation in the Induction program	Very Good	Good	Average	Poor	Very Poor
2005	YES	37	46	14	2	1
	NO	29	45	20	5	0
2004	NO	22	46	26	4	1

Another area in which we found remarkable differences was in their perception of the "commitment of authorities to teaching". The percentage of students that attended the induction program that this commitment is "High" or "Very high" is 64%, versus 56% for first-year students that did not attend. More remarkably, only 42% of second year students agreed. This may come from the fact that students that attended this program were able to see the Dean, the Director of the School and other authorities heavily involved in this program, and this generated a higher level of trust in their commitment to teaching. We also note that low trust decreased sharply for students that participated, showing a displacement from "low trust level" to "high trust level",

It is also worthy of mention that we see no change in the level of trust of teachers. We feel that this is because we were not able to involve the teachers of first-year courses in the activities of the induction program, and students only met them one week later, when normal classes started.

[4] It is important to remember that 2nd year students never had an induction programme.

TABLE 2: Results for question: "Trust in the commitment of school authorities to teaching".

Percentage of replies per level

Generation	Participation in the Induction Program	Very High	High	Average	Low	Very Low
2005	YES	14	50	30	5	0
	NO	11	45	32	10	2
2004	NO	7	35	35	19	3

Finally, we consider the question about the "Happiness level" related to being a student in this school. The percentage of students that declare to be "Very happy" is 18 points higher for students that participated when we compare to those first-year students that did not attend, and 20 points higher when we compare to second year students. Also, their general mood about the challenges of the school was better.

It is reasonable to think that other variables that can produce changes in the results, we considered this possibility, but we found no other variables that could produce significant changes in the results, or affect the relationship with classmates. In this case, it was reviewed and proved, that there were no differences between the 2004 cohort and the 2005 cohort. Both groups had the same teachers, teaching assistants, classrooms, and extra activities.

It is important to mention that one of the reasons that students that did not participate gave for their absence was "not interested" (30% of those that did not come, attendance was voluntary). Fearing that this group could be distorting results, we recomputed everything without them, and the results did not change significantly.

5.2 Conclusions

The induction week strengthened the relationship among students, encouraging trust and collaboration. This was a consequence of an experience rich in team work. This program brought together people that did not know each other, at a relevant time in their lives, when they feel a mix of happiness, hope, anxiety and uncertainty.

We expect that this will improve the feeling of well-being, associated to an environment of trust and collaboration, and also improve the skills and attitudes towards team work in various areas.

Hands-on activities with playful components favor the learning process and team. On the basis of the opinions of the students, gathered through conversations and surveys, we can say that their evaluation was very positive. They valued the opportunity to get to know the school in an informal setting, they were fascinated by the engineering challenges, and at the end had a feeling of being already members of our community.

It is remarkable that, even though students had a very demanding set of activities throughout the day, they remained enthusiastic and in good spirits until the end. When evaluating the experience, they valued the team work and the feeling of achievement when they could attain the proposed goals at the end of the day.

Participation of school authorities in non traditional activities increases trust and promotes good relationships with the students. For the Dean and other authorities to be there, to show that they value the activity, to become involved in the work of the teams make the students feel important for the school. This may allow students to make better use of the many opportunities the school offers, and to be better prepared to face the many difficulties that may come along the way.

5.3 Discussion and future work

This was the first time our school organized this kind of "active induction" for first-year students, and it has already been decided to make it a permanent part of our activities. Other schools are interesting in replicating it with their students. As mentioned before, it was not good that the teachers of the first-year courses did not participate, and we plan to involve them next year.

Another line of work we intend to continue is the development of better methodologies for measuring the impact of these programs. Only if we can measure this impact we will be able to improve them, and to obtain more resources for the program. We plan to complement our current methodology adding observers that may have points of comparison. For example, we may have in-depth interviews with professors and teaching assistants, who have taught the current cohort as well as previous ones. We may also interview parents that have more than one child in our school.

Having improved our students' ability to relate to others, we now have the challenge of providing opportunities for this to continue developing. We plan to link this to formal courses that may provide the appropriate spaces.

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ENCUESTA ALUMNOS DE PRIMER AÑO 2005

1. RUT: _____

2. Edad: _____ Año de Ingreso Facultad: _____

3. Sexo: femenino ☐ masculino ☐

4. ¿Cómo evalúas, en general, la relación con tus compañeros de curso?

a) muy buena b) buena c) regular d) mala e) muy mala

5. ¿Cómo evalúas, en general, la relación con tus compañeros de cursos superiores?

a) muy buena b) buena c) regular d) mala e) muy mala

6. ¿Cómo evalúas, en general, la relación con tus profesores?

a) muy buena b) buena c) regular d) mala e) muy mala

7. ¿Cómo evalúas, en general, la relación con los administrativos de la Escuela?

a) muy buena b) buena c) regular d) mala e) muy mala

8. ¿Cuántos "buenos compañeros", alumnos de primer año, tienes en la Escuela? Por "buen compañero" se entiende a alguna persona de la Escuela, alumno de primer año, con el cual tengas una relación de confianza y desinteresada.

a) Entre 20 o más b) entre 19 - 15 c) entre 14 - 10 d) entre 9 -5 e) entre 4 - 0

9. ¿Cuántos "amigos íntimos", alumnos de primer año, tienes en la Escuela? Por "amigo íntimo" se entiende a alguna persona de la Escuela, alumno de primer año, que pertenece a tu círculo cercano de relaciones. A esas personas que son casi como tu familia o compadre.

a) Entre 8 o más b) entre 6 - 7 c) entre 4 - 5 d) entre 2 - 3 e) entre 0 - 1

10. ¿A cuántas actividades extraprogramáticas, en promedio mensual, asistes en la Escuela (por ejemplo, talleres de baile, seminarios, cine, exposiciones artísticas, actividades religiosas o políticas, acción social, etc.)?

a) Entre 8 o más b) entre 6 - 7 c) entre 4 - 5 d) entre 2 - 3 e) entre 0 - 1

11. Tu confianza en tus compañeros de curso es:

a) muy alta b) alta c) media d) baja e) muy baja

12. Tu grado de colaboración con tus compañeros es:

a) muy alto b) alto c) medio d) bajo e) muy bajo

13. Tu confianza en el compromiso de las autoridades de la Facultad para con la docencia es:

a) muy alta b) alta c) media d) baja e) muy baja

14. Tu confianza en el compromiso de los profesores para con la docencia es:

a) muy alta b) alta c) media d) baja e) muy baja

15. Cuando asistes a clases, por lo general te encuentras en un estado de ánimo de interés:

a) siempre b) casi siempre c) ocasionalmente d) raramente e) nunca

16. Cuando asistes a clases, por lo general te encuentras en un estado de ánimo de resignación:

a) siempre b) casi siempre c) ocasionalmente d) raramente e) nunca

17. Tu nivel de satisfacción con tu rendimiento académico es:

a) muy alto b) alto c) medio d) bajo e) muy bajo

18. Tu nivel de autoconfianza en el ámbito de los estudios es:

a) muy alto b) alto c) medio d) bajo e) muy bajo

19. Mi grado de satisfacción de ser alumno de esta Facultad es:

a) superior a lo esperado b) lo esperado c) bajo lo esperado.

20. En relación a ser alumno de la Facultad te sientes:

a) Muy feliz b) feliz c) infeliz d) muy infeliz

21. Lee la siguiente proposición: "La Facultad de Ciencias Físicas y Matemáticas de la Universidad de Chile es una prestigiosa institución, de larga tradición, comprometida con el desarrollo de la ciencia y la ingeniería, a través de investigación de primer nivel y la formación de profesionales de excelencia para el país", esta proposición la compartes:

a) totalmente b) parcialmente c) me da lo mismo d) no la comparte e) no la comparte en nada

22. Lee la siguiente proposición: "La Facultad asume la formación de sus alumnos de manera integral, entregando sólidos conocimientos científicos y tecnológicos" esta proposición la compartes:

a) totalmente b) parcialmente c) me da lo mismo d) no la comparte e) no la comparte en nada

23. Lee la siguiente proposición: "La Facultad, además genera espacios para la formación en planos deportivo, artísticos, recreativos y sociales" esta proposición la compartes:

a) totalmente b) parcialmente c) me da lo mismo d) no la comparte e) no la comparte en nada

24. Lee la siguiente proposición: "Uso regularmente aquellos espacios de la Facultad que me presentan mayor utilidad (Salas de computación, oficinas administrativas, oficinas de profesores, laboratorios, espacios deportivos, centros médico, etc.)", esta proposición la compartes:

a) totalmente b) parcialmente c) me da lo mismo d) no la comparte e) no la comparte en nada

25. Tu participación tanto en las actividades de la semana mechona como pre - mechona fue:

a) muy alta b) alta c) media d) baja e) muy baja

26. ¿Participaste en la semana de inducción efectuada en la semana anterior al ingreso de clases?

SI ☐ NO ☐

27. Si tu respuesta anterior fue negativa, esto fue debido a:

a) me encontraba fuera de santiago b) no me enteré c) no me interesaba
d) otra razón. ¿Cuál? _____

Si deseas agregar algún comentario sobre cualquier tema que estimes relevante o sobre esta encuesta:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

¡MUCHAS GRACIAS POR CONTESTAR!

ENCUESTA ALUMNOS INGRESADOS EL 2004

RUT: _____

28. Edad: _____ Año de Ingreso Facultad: _____

29. Sexo: femenino ☐ masculino ☐

30. ¿Cómo evalúas, en general, la relación con tus compañeros de curso?

En la actualidad:

a) muy buena b) buena c) regular d) mala e) muy mala

Hace un año atrás:

a) muy buena b) buena c) regular d) mala e) muy mala

31. ¿Cómo evalúas, en general, la relación con tus profesores?

En la actualidad:

a) muy buena b) buena c) regular d) mala e) muy mala

Hace un año atrás:

a) muy buena b) buena c) regular d) mala e) muy mala

32. ¿A cuántas actividades extraprogramáticas, en promedio mensual, asistes en la Escuela (por ejemplo, talleres de baile, seminarios, cine, exposiciones artísticas, actividades religiosas o políticas, acción social, etc.?

a) Entre 8 o más b) entre 6 - 7 c) entre 4 - 5 d) entre 2 - 3 e) entre 0 - 1

33. Tu confianza en tus compañeros de curso es:

En la actualidad:

a) muy alta b) alta c) media d) baja e) muy baja

Hace un año atrás:

a) muy alta b) alta c) media d) baja e) muy baja

34. Tu grado de colaboración con tus compañeros es:

En la actualidad:

a) muy alto b) alto c) medio d) bajo e) muy bajo

Hace un año atrás:

a) muy alto b) alto c) medio d) bajo e) muy bajo

35. Tu confianza en el compromiso de las autoridades de la Facultad para con la docencia es:

a) muy alta b) alta c) media d) baja e) muy baja

36. Tu confianza en el compromiso de los profesores para con la docencia es:

a) muy alta b) alta c) media d) baja e) muy baja

37. Tu nivel de satisfacción con tu rendimiento académico es:

En la actualidad:

a) muy alto b) alto c) medio d) bajo e) muy bajo

Hace un año atrás:

a) muy alto b) alto c) medio d) bajo e) muy bajo

38. Tu nivel de autoconfianza en el ámbito de los estudios es:

En la actualidad:

a) muy alto b) alto c) medio d) bajo e) muy bajo

Hace un año atrás:

a) muy alto b) alto c) medio d) bajo e) muy bajo

39. Mi grado de satisfacción con ser alumno es de esta Facultad es:

a) superior a lo esperado b) lo esperado c) bajo lo esperado.

40. En relación a ser alumno de la Facultad te sientes:

En la actualidad:

a) Muy feliz b) feliz c) regular d) infeliz e) muy infeliz

Hace un año atrás:

a) Muy feliz b) feliz c) regular d) infeliz e) muy infeliz

41. Lee la siguiente proposición: "La Facultad de Ciencias Físicas y Matemáticas de la Universidad de Chile es una prestigiosa institución, de larga tradición, comprometida con el desarrollo de la ciencia y la ingeniería, a través de investigación de primer nivel y la formación de profesionales de excelencia para el país", esta proposición la compartes:

a) totalmente b) parcialmente c) me da lo mismo d) no la comparte e) no la comparte en nada

42. Lee la siguiente proposición: "La Facultad asume la formación de sus alumnos de manera integral, entregando sólidos conocimientos científicos y tecnológicos" esta proposición la compartes:

a) totalmente b) parcialmente c) me da lo mismo d) no la comparte e) no la comparte en nada

43. Lee la siguiente proposición: "La Facultad, además genera espacios para la formación en planos deportivo, artísticos, recreativos y sociales" esta proposición la compartes:

a) totalmente b) parcialmente c) me da lo mismo d) no la comparte e) no la comparte en nada

44. Lee la siguiente proposición: "Uso regularmente aquellos espacios de la Facultad que me presentan mayor utilidad (Salas de computación, oficinas administrativas, oficinas de profesores, laboratorios, espacios deportivos, centros médico, etc.)", esta proposición la compartes:

a) totalmente b) parcialmente c) me da lo mismo d) no la comparte e) no la comparte en nada

Si deseas agregar algún comentario sobre cualquier tema que estimes relevante o sobre esta encuesta:

¡MUCHAS GRACIAS POR CONTESTAR!