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ATTITUDES AND PERCEPTIONS OF STUDENTS IN A SYSTEMS ENGINEERING E-LEARNIG COURSE

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Abstract: In this paper is reported the attitudes and perception of students in a systems Engineering e-learning course and a teacher with more than six years of experience teaching online courses. The paper reports the teacher and students' perceptions about the e-learning courses experience. Personalized interviews with some of the students were carried out. ATTLES and COLLES surveys were also applied to students. The teacher and students were interviewed about the advantages and disadvantages experienced over their e-learning experience. The teacher recognized the benefits of the flexibility in an asynchronous environment, the democratic values of the media which gives voice to each one in the class and the possibilities for a reflexive practice. It is also recognized the volume of work involved and the need to develop strategies to cope with numerous students. From the student point of view, the greatest difficulty detected is fear to the unknown and the perceived workload to comply with the requirements of the course when compared to a traditional face to face course. Their lack of planning and organizing abilities are the main cause for the manifested students' lack of interest to participate in online discussion forums. Communication strategies and adaptation strategies are proposed to involve the student into discussion and create a more comfortable and trusting environment. It can also be concluded that attitudes towards thinking and learning, as measured by ATTLS, find a balance between connected knower and separate knower. The results from COLLES survey permitted to conclude that in general in the three courses students perceive that they found in the course what they initially expressed as desirable.

Zusammenfassung: In dieser Abhandlung dreht es sich um den Bericht eines Professors der über eine Erfahrung von mehr als sechs Jahren mit E-learning Kursen verfügt. In dieser Arbeit wird von den Vorstellungen des Lehrer sowie auch der Schüler während der E-learning Kurse berichtet. Es wurden personalisierte Interviews mit einigen der Studenten durchgeführt. ATTLES und COLLES Meinungsumfragen wurden auch unter den Studenten durchgeführt. Die Professoren und Studenten wurden über die vor- und nachteiligen Erfahrungen in dieser Art von Kursen befragt. Der Professor erkannte die Vorteile der Flexibilität in einer asynchronischen Umgebung, die demokratischen Werte der Media, die jedem Einzelnen in dem Kurs die Gelegenheit gibt seine Meinung auszudrücken und die Möglichkeit zu einer reflexiven Praxis. Es wird hier aber auch klar wieviel bedeutende Arbeit das erfordert und dass die Notwendigkeit besteht Strategien zu entwickeln um den Schwierigkeiten bei dem Umgang mit einer großen Anzahl von Studenten gewachsen zu sein. Aus der Sicht der Studenten liegt die größte Schwierigkeit in der Angst vor dem Unbekannten und der Arbeitslast im Vergleich mit den traditionellen face to face Kursen. Die fehlende Planung und Organisation sind die Hauptgründe für das fehlende Interesse der Studenten an der Beteiligung an den E-learning Plattformen. Kommunikations- und Anpassungsstrategien werden vorgeschlagen um die Studenten mehr mit einzubeziehen und ein komfortables und Vertrauen erweckendes Klima herzustellen. Man kann außerdem zu dem Schluß kommen, daß die Einstellung zum Denken und Lernen, so wie es von ATTLES gemessen wird, einen Ausgleich zwischen einem vernetzten und einem seperaten Lerner schafft. Die Resultate, die durch die COLLES Meinungsumfrage erhalten wurden erlauben zu der Schlußfolgerung zu gelangen, dass die an den drei Kursen beteiligten Studenten generell erreicht haben, was sie anfangs als wünschenswert genannt hatten.

Key words: Online education, E-learning, perceptions, attitudes for learning, asynchronous environment.

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1. Introduction

To stay competitive in today's business environment and face global competition, a continuous stream of new skills, tools and knowledge is needed in Mexico's economy, particularly when it is recognized that shortages in a skilled workforce is one of the largest barriers to growth and development.

The Internet has changed the practice of engineering and engineering education has not escaped its influence. Future engineers will require self-directed learning skills. E-learning is a tool to assist in this process and therefore there is a need to develop the capacity and readiness to utilize e-learning within educational programs (Rossett, 2001).

In Mexico, the term 'e-learning' is relatively new, however, an increasing number of universities are responding to the challenge of e-learning and are moving to adopt it, yet are finding significant barriers to adoption hampering their efforts. Although in some academic programs the e-learning experience is relatively older, in the engineering arena there are a very limited number of reported studies on the implementation of e-learning in this country and nearly no research conducted on the barriers encountered by engineering programs using this new training method.

In the Autonomous University of Baja California (UABC) e-learning is an optional mode to impart class. Teachers interested in that modality acquire the necessary experience and skills through courses and workshops given in UABC or outside the university. Even though UABC's development plan states the need to broaden the e-learning experiences in the different programs not all teachers respond homogeneously.

This study was set out to detect the perceptions and key barriers to e-learning encountered by students and teachers of an industrial engineering academic program in a public Mexican university.

E-learning

Electronic learning (e-Learning or eLearning) is a general term used to refer to a form of learning in which the instructor and student are separated by space or time, where the gap between the two is bridged through the use of online technologies. In Western countries, e-learning has emerged as part of a powerful and transformative drive to meet learning needs and extend traditional modes of training. E-Learning is defined as 'the use of internet technologies to deliver a broad array of solutions that enhance knowledge and performance' (Rosenberg, 2001).

Several scholars have developed different definitions of e-learning. Marc Rosenberg's definition above is based on three fundamental criteria:

1. E-Learning is networked, which makes it capable of instant updating, storage/ retrieval, distribution and sharing of instructions or information.
2. It is delivered to the end-user via a computer using a standard Internet technology.
3. It focuses on the broadest view of learning, i.e. learning solutions that go beyond the traditional paradigms of training.

Most authors agree that e-learning is a form of learning delivered via computers over the Internet, intranets, extranets, satellite broadcast, audio/video tape, interactive TV or CD-ROM (Hall & Snider, 2000; Lytras *et al*., 2002; Urdan &Weggen, 2000).

In sum, successful e-learning demands social, cognitive, and behavioral skills. The three pillars that determine the success or failure of e-learning programs are the interconnectedness among (1) person, (2) behavior, and (3) environment. These are the three major areas that interventions should target.

- *E-learners' cognitive skills*: E-learners must have the prerequisite knowledge and skills necessary to participate in e-learning. Computer competency through training, and practice, and time management skills are essential.
- *Environment*: Organizations must support e-learning by offering a supportive culture, incentives, models, resources, and fostering e-learning self-efficacy.
- *Belief and behavior*: E-learners' must have high e-learning self-efficacy and the appropriate behavioral skills such as taking responsibility for learning.

Students Attitudes and Perception

Positive attitudes towards the learning environment, its structure and contents, are fundamental elements that favor meaningful learning (Marzano, 1992; Marzano et al., 1988) and are related to the students' ways of knowing. . In Women's development theory (Belenky et al.,1986), the principles for identifying a connected knower (CK) from a separate knower (SK) are laid out. As Belenky et. al (1986) point out, a separate knower tends to be adversarial and focused on critical analysis that excludes personal feelings and beliefs. A connected knower, on the other hand, seeks to understand others' ideas and points of view, emphasizing the relevance of context in the development of knowledge and the fundamental value of experience.

As Galotti et al. (1999) mentions, people with higher CK scores tend to find learning more enjoyable, and are often more cooperative, congenial and more willing to build on the ideas of others, while those with higher SK scores tend to take a more critical and argumentative stance to learning. However studies have shown that these two learning styles are independent of each other (Galotti et al., 1999; Galotti et al., 2001) and it must be considered that they are only a reflection of learning attitudes, not learning capacities or intellectual power.

Perception is also an element that has influence on the academic performance and on the students´ satisfaction within the on-line course. Keller & Cernerud (2002, p. 66) mention that "strategy on implementing e-learning may play a crucial role for students' perception", so this perception is related to the quality of an e-learning learning environment from a social constructivist perspective as mentioned by Taylor & Maor (2000). Thus, dimensions such as Relevance, Reflection, Interactivity, Tutor Support, Peer Support, and Interpretation play a crucial role on the educational design of the courses that have a constructivist approach.

Barriers to e-learning implementation

As with any new program, getting started with e-learning can be a challenge. Setting up an e-learning program requires time, and expertise. But barriers to initiating an e-learning program can vary significantly depending on whether an institution plans to create its own courses or buy courses already developed by another institution. All the courses taking part in this analysis were developed by the teacher responsible of each course.

Different studies reveal that e-learning barriers are heterogeneous encompassing seven types of barriers, namely (Mungania, 2003):

1. personal or dispositional,
2. learning style
3. instructional,
4. situational,
5. organizational,
6. content suitability, and
7. technological barriers.

E-learning advantages

Like no other form of education, e-learning promises to provide a single experience that accommodates the three distinct learning styles; auditory learners, visual learners, and kinesthetic learners. Other unique opportunities created by the advent and development of e-learning are more efficient training of a globally dispersed audience; and reduced publishing and distribution costs as Web-based training becomes a standard.

E-learning also offers individualized instruction, which print media, cannot provide, and instructor-led courses allow clumsily and at great cost. In conjunction with assessing needs, e-learning can target specific needs. And by using learning style tests, e-learning can locate and target individual learning preferences.

Additionally, asynchronous e-learning is self-paced. Advanced learners are allowed to speed through or bypass instruction that is redundant while novices slow their own progress through content, eliminating frustration with themselves, their fellow learners, and the course.

In these ways, e-learning is inclusive of a maximum number of participants with a maximum range of learning styles, preferences, and needs.

Taking into account the complexity related with the implementation of e-learning in an organization such as UABC, the objective of this work is to simultaneously know the students' attitudes towards thinking and learning and the evaluation, which from their own perspective, made the students about the strategies, activities and contents of the courses. It is also an objective of this work to complement this information through interviews of students and the teacher of the courses.

2. Method

The courses

For this report, three Systems Engineering courses 100% on-line (2006-2, 2008-1, 2008-2), imparted between 2006 and 2008, to industrial engineering students were analyzed. Moodle was used as the LMS for all three courses. Personalized interviews with some of the students were carried out. At the beginning of the course, students were asked to voluntarily respond Moodle's survey Attitudes Towards Thinking and Learning (ATTLS see Annex I). In order to identify the students´ perceptions about the design of the course, they were asked to answer the Constructivist On Line Learning Environment Survey (COLLES see Annex II). In order to identify possible changes in their perceptions, this questionnaire was applied to students in two different times in course 2008-2, and in three different times in courses 2006-2 and 2008-1.

The Attitudes Towards Thinking and Learning Survey (ATTLS) is an instrument developed by Galotti et al. (1999) to measure the extent to which a person is a 'connected knower' (CK) or a 'separate knower' (SK).

The COLLES comprises 24 statements grouped into six scales, each of which helps to address a key question about the quality of the on-line learning environment: Relevance.- How relevant is on-line learning to students' professional practices?; Reflection.- Does on-line learning stimulate students' critical reflective thinking?; Interactivity.- To what extent do students engage on-line in rich educative dialogue?; Tutor Support.- How well do tutors enable students to participate in on-line learning?; Peer Support.- Is sensitive and encouraging support provided on-line by fellow students?; Interpretation.- Do students and tutors make good sense of each other's on-line communications?

COLLES was developed to support the use of the Web for teaching in higher education, especially for postgraduate professional development programs for which social constructivism is a key referent of instructional design (Taylor & Maor, 2000).

Students Interviews

For the interviews four students were selected from each group. Selection of students was based upon grades. Two higher grade and two lower grade students were asked to participate in the interview process. A total of 20 students were interviewed.

It was an open interview, this means that no predetermined questions were made, instead students were asked to talk about their experience in the course, how they felt, what they would like to be different, what were the main obstacles or barriers he or she encountered in the course, and so on. This way, students were allowed to bring to fore more aspects about their e-learning experience.

3. Results

The number of students enrolled in each course and the number of students that answered the ATTLS and the COLLES surveys are presented in Table 1. The course 2008-1 outstands for the number of enrolled students. Note that COLLES was applied to students more than once in each course to identify possible changes in their perceptions.

Table 1.*: Number of students in Systems Engineering respondent to ATTLS and COLLES.*

Systems Engineering course	Number of Students in course	ATTLS Students respondent	COLLES Students respondent
2006-2	28	20	22
			15
			15
2008-1	40	40	26
			27
			17
2008-2	25	14	9
			11

Attitudes Towards Thinking and Learning (ATTLS)

The average of data obtained for ATTLS from the three courses is showed in Figure 1 where a black line separates the results corresponding to Connected Learning and Separate Learning.

The three groups showed relatively high values in questions related to Connected Learning, being group 2006-2 the one with the lower values. This pattern is repeated in the questions related to Separate Learning but with relatively lower values, here the lowest values were the ones of the declaration ... *I like playing devil's advocate (arguing the opposite of what someone is saying)* and *I spend time figuring out what's 'wrong' with things (For example, I'll look for something in a literary interpretation that isn't argued well enough).*

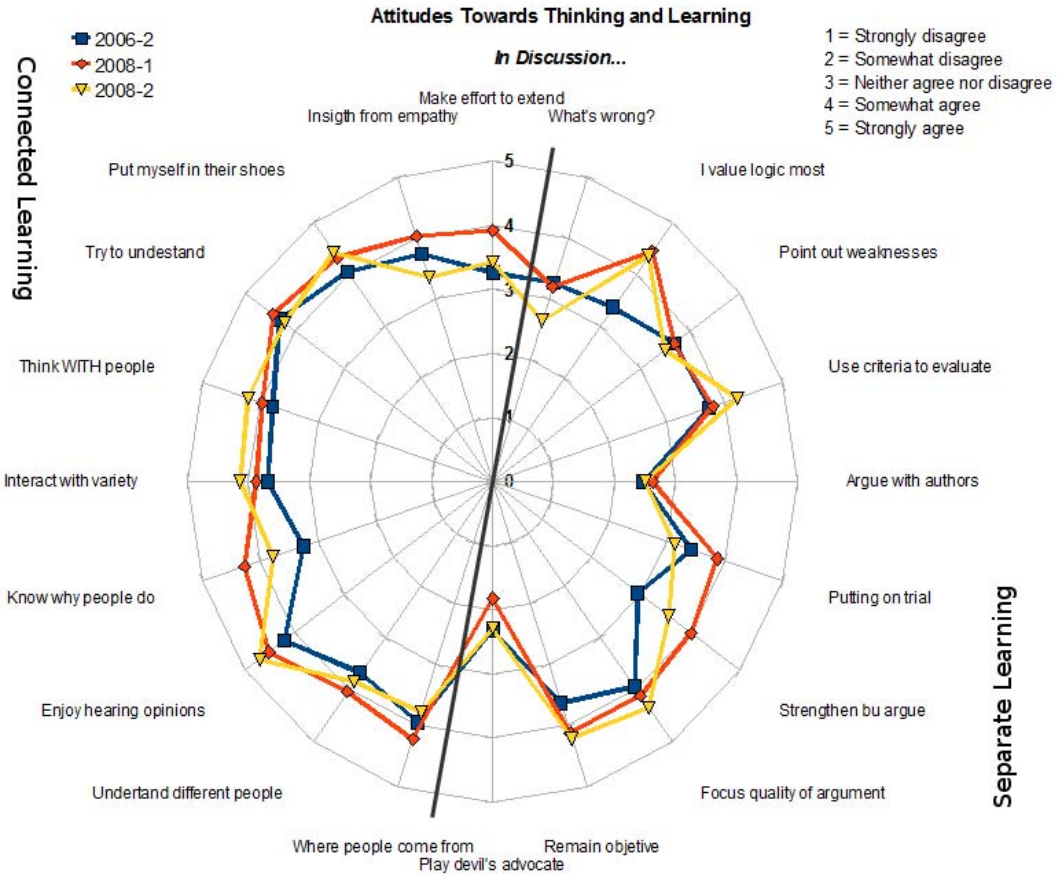

Figure 1.: *Mean data for the Attitudes towards Thinking and Learning for students of the three courses, showing on the left side of the black line the results related to connected learning and on the right of the black lines the results related to separate learning.*

Constructivist On Line Learning Environment Survey (COLLES)

Figure 2 shows the average values obtained by COLLES for the course 2006-2. The figure shows the students' expressed preferences at the beginning of the course and at three later points of time. The values represent the students' perceptions of the existence of a virtual classroom environment that supports them to reconstruct themselves as both reflective and collaborative learners.

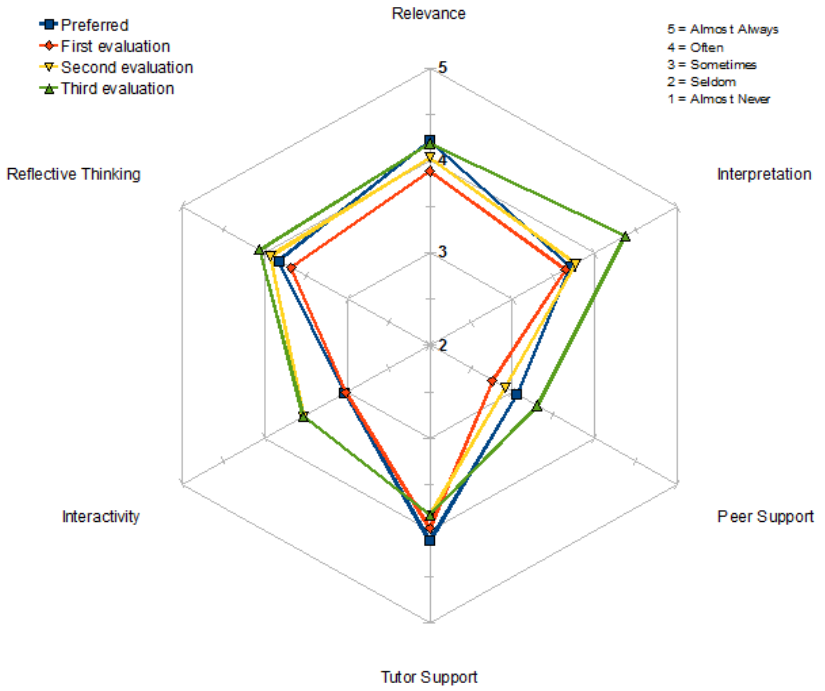

Figure 2.*: Mean of COLLES values for the expressed preferences (preferred) and three evaluations in the course on 2006-2 (value 1 omitted from scale in graph).*

In general, values from the first to the last evaluation increased, it is to be highlighted the values of the third evaluation that comparatively has its lower value in "tutor support". Departing from the expressed preferences it is possible to see that the evaluation of what students found in the course has little variation compared to their preferences.

Figure 3 shows that the values of the course 2008-1follow a similar pattern of that of 2006-1, with the difference that the last evaluation in 2008-1 shows the lower values (yellow line).

Unlike the first two courses, course 2008-2 showed higher values in the six variables (Figure 4).

In this course the values recorded in "Relevance" and "Interpretation" are higher than the values of the expressed preferences.

In general in the three courses students perceived that they found in the course what they initially expressed as desirable. Albeit the lower values correspond to Peer Support, they don´t tend to be very different from the values that express a desirable condition for this variable. The results showed that the design of the three courses and the teacher performance in each one corresponded to the student´s expectations.

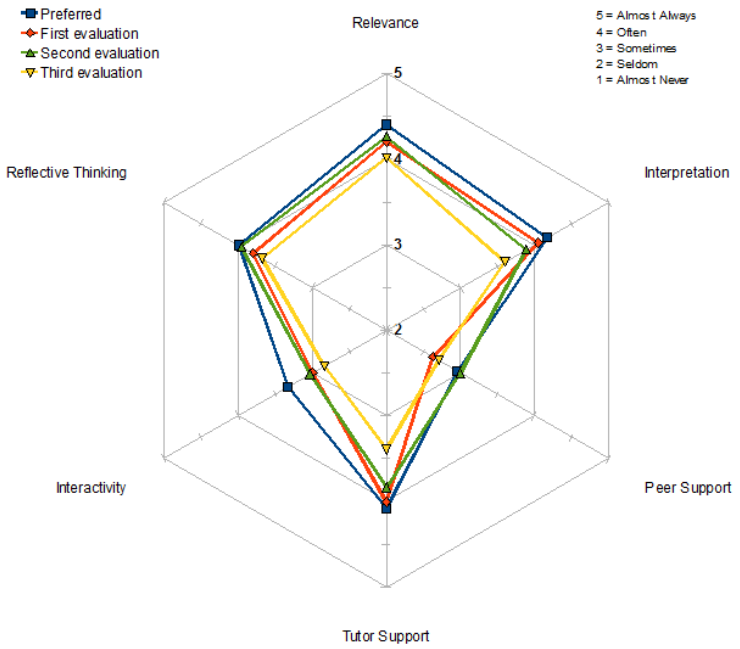

Figure 3.*: Mean of COLLES values for the expressed preferences (preferred) and three evaluations in the course on 2008-1 (value 1 omitted from scale in graph).*

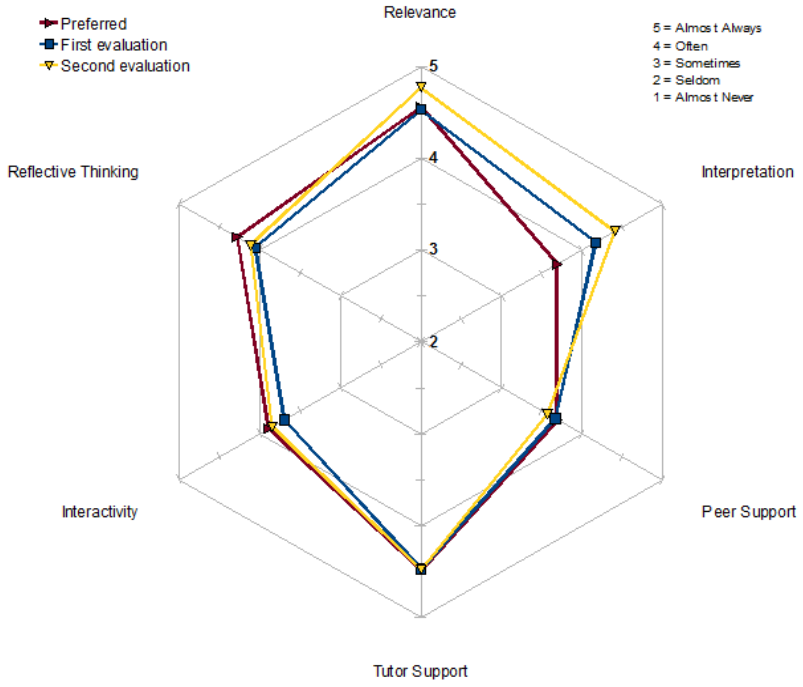

Figure 4.: Mean of COLLES values for the expressed preferences (preferred) and two evaluations in the course on 2008-2 (value 1 omitted from scale in graph).

Students interviews

The main or more frequently mentioned advantages and disadvantages were extracted from the 20 interviews applied to students.

The main advantages mentioned by students during the interview were:

- On-demand availability enables students to complete training conveniently at off-hours or from home.
- Self-pacing for slow or quick learners reduces stress and increases satisfaction.
- Interactivity engages users, pushing them rather than pulling them through training.
- Confidence that refresher or quick reference materials are available reduces burden of responsibility of mastery.

The disadvantages of e-learning more frequently mentioned by students were:

- Technology issues of the learners are most commonly technophobia and unavailability of required technologies.
- Portability of training has become strength of e-learning with the proliferation of network linking points, notebook computers, PDAs, and mobile phones, but still does not rival that of printed workbooks or reference material.
- The lack of planning for scheduling readings, essays and discussions in forums are a disadvantage mentioned very often. Students in face to face environments are not used to continue discussing about the subject when they're out the classroom. E-learning demands to stay engaged to be able and willing to log into the course, read the recent posts and continue the dialog through new posting, opinions, comments and bring to the fore new interesting subjects.
- Workload is perceived as a burden since e-learning students have to read more, do more research and write more.
- Reduced social and cultural interaction can be a drawback. The impersonality, suppression of communication mechanisms such as body language, and elimination of peer-to-peer learning that are part of this potential disadvantage are lessening with advances in communications technologies.
- Insufficient support from coworkers to engage in e-learning
- Lack of support from the teacher responsible of the course
- Lack of technical support or support services
- Lack of technical expertise or unfamiliarity with e-learning technology.

The importance of course development cannot be over-emphasized. Our interviews revealed that when an individual has a bad experience in a conventional course, he/she is likely to blame the instructor. When he/she has a bad experience in an online course, he/she is likely to blame the format and will be unlikely to pursue additional e-learning experiences.

It is worth to highlight two special cases when students mentioned the high impact that e-learning had in their lives. The first case was a student who suffered an accident just two weeks after the course

initiated. He mentioned that thanks to the opportunity to continue studying from the hospital he could finish this course which was the last one of the program to obtain the engineering degree.

Other important case mentioned in the interview was the one from four students who lived several miles away from the university campus and these courses permitted them to continue studying while working and helping their parents in their respective towns.

Teacher perspective

Teachers developing e-learning courses note that creating online courses takes more time than face-to-face courses because online work has to be good enough to stand alone when there is no instructor to compensate for a weak design.

It is also worth noting the importance of "purposeful instructional design" in the online environment. In our experience, it's easier to build a completely new online course than to modify an existing face-to-face course, since the modifications required to convert in-person courses successfully are very extensive.

In relation to students behavior, it was noticeable that the more dedicated students (participative, with higher grades) were the ones that dedicated more time to on-line courses and completed their duties on time and with high quality. In contrast, students with low participation levels did not logged on the course as often as the more dedicated students.

4. Conclusion

The results of this work coincide with the results found by diverse authors (Mungania, 2003; Meyen and Hui Yang, 2006) in the types and frequency of the encountered barriers and disadvantages to engage in e-learning experiences.

The vast movement towards e-learning is clearly motivated by the many benefits it offers. However much e-learning is praised and innovated, computers will never completely eliminate human instructors and other forms of educational delivery. What is important is to know exactly what e-learning advantages exist and when these outweigh the limitations of the medium.

The pro's and con's of e-learning vary depending on program goals, target audience, access to technology, and culture. But it is unarguable that e-learning is rapidly growing as form of training delivery and most are finding that the clear benefits to e-learning will guarantee it a role in their overall learning strategy.

Industrial Engineering students face the challenge of constant innovation, both in the daily academic activities as well as in the rapid advances of the processes and technologies they're studying. Considering this, industrial engineering students' learning experience should always consider an innovative component as a part of their learning process.

Although it is no possible to generalize attitudes of all engineering students, at least it can be concluded that attitudes towards thinking and learning, as measured by ATTLS, find a balance between connected knower and separate knower. This balance allow to find learning more enjoyable, often more cooperative, congenial and more willing to build on the ideas of others, and also to take a more critical and argumentative stance to learning (Galotti et al. 1999).

On the other side, the design of the Engineering Systems course and the teacher performance corresponded with the answers of the students in COLLLES and this was corroborated during the interviews.

Exposing students to modalities such as e-learning, which favor their self-discipline, academic research, communication technologies skills, among others, is an additional advantage that enables them for a better performance as professionals in a society increasingly characterized by globalization processes.

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Annex I

Attitudes Towards Thinking and Learning Survey (ATTLS) as appear in Moodle.

Attitudes Towards Thinking and Learning

Responses In discussion ...	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1 In evaluating what someone says, I focus on the quality of their argument, not on the person who's presenting it.	○	○	○	○	○
2 I like playing devil's advocate - arguing the opposite of what someone is saying.	○	○	○	○	○
3 I like to understand where other people are 'coming from', what experiences have led them to feel the way they do.	○	○	○	○	○
4 The most important part of my education has been learning to understand people who are very different to me.	○	○	○	○	○
5 I feel that the best way for me to achieve my own identity is to interact with a variety of other people.	○	○	○	○	○
6 I enjoy hearing the opinions of people who come from backgrounds different to mine - it helps me to understand how the same things can be seen in such different ways.	○	○	○	○	○
7 I find that I can strengthen my own position through arguing with someone who disagrees with me.	○	○	○	○	○
8 I am always interested in knowing why people say and believe the things they do.	○	○	○	○	○
9 I often find myself arguing with the authors of books that I read, trying to logically figure out why they're wrong.	○	○	○	○	○
10 It's important for me to remain as objective as possible when I analyze something.	○	○	○	○	○
11 I try to think with people instead of against them.	○	○	○	○	○
12 I have certain criteria I use in evaluating arguments.	○	○	○	○	○
13 I'm more likely to try to understand someone else's opinion than to try to evaluate it.	○	○	○	○	○
14 I try to point out weaknesses in other people's thinking to help them clarify their arguments.	○	○	○	○	○
15 I tend to put myself in other people's shoes when discussing controversial issues, to see why they think the way they do.	○	○	○	○	○
16 One could call my way of analysing things 'putting them on trial' because I am careful to consider all the evidence.	○	○	○	○	○
17 I value the use of logic and reason over the incorporation of my own concerns when solving problems.	○	○	○	○	○
18 I can obtain insight into opinions that differ from mine through empathy.	○	○	○	○	○
19 When I encounter people whose opinions seem alien to me, I make a deliberate effort to 'extend' myself into that person, to try to see how they could have those opinions.	○	○	○	○	○
20 I spend time figuring out what's 'wrong' with things. For example, I'll look for something in a literary interpretation that isn't argued well enough.	○	○	○	○	○

Annex II

Constructivist On Line Learning Environment Survey (COLLES) as appear in Moodle.

Relevance

Responses	Almost Never	Seldom	Sometimes	Often	Almost Always
In this online unit...					
1 I prefer that my learning focuses on issues that interest me.					
2 I found that my learning focuses on issues that interest me.					
3 I prefer that what I learn is important for my professional practice.					
4 I found that what I learn is important for my professional practice.					
5 I prefer that I learn how to improve my professional practice.					
6 I found that I learn how to improve my professional practice.					
7 I prefer that what I learn connects well with my professional practice.					
8 I found that what I learn connects well with my professional practice.					

Reflective Thinking

Responses	Almost Never	Seldom	Sometimes	Often	Almost Always
In this online unit...					
9 I prefer that I think critically about how I learn.					
10 I found that I think critically about how I learn.					
11 I prefer that I think critically about my own ideas.					
12 I found that I think critically about my own ideas.					
13 I prefer that I think critically about other students' ideas.					
14 I found that I think critically about other students' ideas.					
15 I prefer that I think critically about ideas in the readings.					
16 I found that I think critically about ideas in the readings.					

Interactivity

Responses	Almost Never	Seldom	Sometimes	Often	Almost Always
In this online unit...					
17 I prefer that I explain my ideas to other students.					
18 I found that I explain my ideas to other students.					
19 I prefer that I ask other students to explain their ideas.					
20 I found that I ask other students to explain their ideas.					
21 I prefer that other students ask me to explain my ideas.					
22 I found that other students ask me to explain my ideas.					
23 I prefer that other students respond to my ideas.					
24 I found that other students respond to my ideas.					

(Cont.)

Tutor Support

Responses In this online unit...	Almost Never	Seldom	Sometimes	Often	Almost Always
25 I prefer that the tutor stimulates my thinking.	○	○	○	○	○
26 I found that the tutor stimulates my thinking.	○	○	○	○	○
27 I prefer that the tutor encourages me to participate.	○	○	○	○	○
28 I found that the tutor encourages me to participate.	○	○	○	○	○
29 I prefer that the tutor models good discourse.	○	○	○	○	○
30 I found that the tutor models good discourse.	○	○	○	○	○
31 I prefer that the tutor models critical self-reflection.	○	○	○	○	○
32 I found that the tutor models critical self-reflection.	○	○	○	○	○

Peer Support

Responses In this online unit...	Almost Never	Seldom	Sometimes	Often	Almost Always
33 I prefer that other students encourage my participation.	○	○	○	○	○
34 I found that other students encourage my participation.	○	○	○	○	○
35 I prefer that other students praise my contribution.	○	○	○	○	○
36 I found that other students praise my contribution.	○	○	○	○	○
37 I prefer that other students value my contribution.	○	○	○	○	○
38 I found that other students value my contribution.	○	○	○	○	○
39 I prefer that other students empathise with my struggle to learn.	○	○	○	○	○
40 I found that other students empathise with my struggle to learn.	○	○	○	○	○

Interpretation

Responses In this online unit...	Almost Never	Seldom	Sometimes	Often	Almost Always
41 I prefer that I make good sense of other students' messages.	○	○	○	○	○
42 I found that I make good sense of other students' messages.	○	○	○	○	○
43 I prefer that other students make good sense of my messages.	○	○	○	○	○
44 I found that other students make good sense of my messages.	○	○	○	○	○
45 I prefer that I make good sense of the tutor's messages.	○	○	○	○	○
46 I found that I make good sense of the tutor's messages.	○	○	○	○	○
47 I prefer that the tutor makes good sense of my messages.	○	○	○	○	○
48 I found that the tutor makes good sense of my messages.	○	○	○	○	○