

# Using empirical based case studies to improve motivation, non-technical skills and content learning: a longitudinal study of an EHEA experience

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## abstract

This work was aimed at determining case-studies' impact on real companies regarding acquiring knowledge, developing non-technical ability and student motivation. A longitudinal study was thus carried out from 2004-05 to 2007-08, during which accountancy students from the tourism management course carried out real case studies, in groups of three, for becoming familiar with how to prepare and use management information in tourism companies within their real context.

The results showed that case-studies, carried out by students working as part of a group, in real companies directly increased motivation, improved acquiring knowledge and, above all, fomented developing non-technical ability, such as oral and written communication skills, team-work, searching for information, managing computer applications, improving analysis, synthesis and critical ability.

**Key words:** ability, real case-study, European higher education space, longitudinal study, accounting for tourism management.

## resumen

Efecto del empleo de estudio de casos reales sobre la mejora de capacidades y la adquisición de conocimientos: análisis longitudinal de una experiencia piloto en el marco del espacio europeo de educación superior

En este trabajo se determina el impacto de la realización de estudios de caso en empresas reales sobre la adquisición de conocimientos, el desarrollo de capacidades no técnicas y la motivación del alumno. Para ello hemos desarrollado un estudio longitudinal que comprende desde el curso 2004-05 hasta el 2007-08, durante los cuales los alumnos de Contabilidad para la Gestión Turística han realizado estudios de caso reales en grupos de tres, para familiarizarse con la elaboración y el empleo de la información para la gestión en las empresas turísticas en su contexto real.

Los resultados obtenidos ponen de manifiesto que la realización en grupo de estudios de caso en empresas reales por parte de los alumnos, aumenta directamente la motivación, mejora la adquisición de conocimientos y, sobre todo, fomenta el desarrollo de habilidades no técnicas como, entre otras, las capacidades de comunicación oral y escrita, trabajo en equipo, de búsqueda de información, manejo de aplicaciones informáticas, capacidades de análisis, de síntesis y crítica.

**Palabras clave:** Capacidades, estudios de caso reales, Espacio Europeo de Enseñanza Superior, estudio longitudinal, Contabilidad para la Gestión Turística.

## résumé

Effet de l'emploi d'étude de cas réels sur l'amélioration de capacités et l'acquisition de connaissances: analyse longitudinale d'une expérience pilote dans le cadre de l'espace européen d'éducation supérieure

L'impact de la réalisation d'études de cas dans des entreprises réelles sur l'acquisition de connaissances, le développement de capacités non techniques et la motivation de l'étudiant est déterminé dans ce travail. Une étude longitudinale a été réalisée à partir du cours de 2004-05 jusqu'au cours de 2007-08, période pendant lesquelles les étudiants de Comptabilité pour la Gestion Touristique ont réalisé, par groupes de trois, des études de cas réels pour se familiariser avec l'élaboration et l'utilisation de l'information pour la gestion des entreprises touristiques dans un contexte réel. Les résultats obtenus démontrent que la réalisation d'études de cas dans les entreprises réelles par des groupes d'étudiants, stimule directement la motivation, améliore l'acquisition de connaissances et produit surtout le développement d'habilités non techniques, telles que les capacités de communication orale et écrite, le travail d'équipe, la recherche d'information, l'utilisation d'applications informatiques, les capacités d'analyse, de synthèse et de critiques.

**Mots-clés:** Capacités, études de cas réels, Espace Européen d'Enseignement Supérieur, étude longitudinale, Comptabilité pour la Gestion Touristique.

## resumo

Efeito do emprego de estudo de casos reais sobre a melhoria de capacidades e a aquisição de conhecimentos: análise longitudinal de uma experiência piloto no marco do espaço europeu de educação superior

Neste trabalho determina-se o impacto da realização de estudos de caso em empresas reais sobre a aquisição de conhecimentos, o desenvolvimento de capacidades não técnicas e a motivação do aluno. Para isso desenvolvemos um estudo longitudinal que compreende desde o curso 2004-05 até o 2007-08, durante os quais os alunos de Contabilidade para a Gestão Turística têm realizado estudos de caso reais em grupos de três, para familiarizarem-se com a elaboração e o emprego da informação para a gestão nas empresas turísticas em seu contexto real.

Os resultados obtidos põem em evidência que a realização em grupo de estudos de caso em empresas reais por parte dos alunos, aumenta diretamente a motivação, melhora a aquisição de conhecimentos e, principalmente, promove o desenvolvimento de habilidades não técnicas como, entre outras, as capacidades de comunicação oral e escrita, trabalho em equipe, de busca de informação, utilização de aplicações informáticas capacidades de análise, síntese e crítica.

**Mots-clés:** Capacidades, estudos de caso reais, Espaço Europeu de Ensino Superior, estudo longitudinal, Contabilidade para a Gestão Turística.

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## Introduction

The endorsement of the Bologna Declaration (1999) created an important challenge for European Union countries—the harmonization of their higher education systems establishing the European Higher Education Area (EHEA). In this context, the role of educators is expected not be solely limited to the formal adaptation of the European Credit Transfer System (ECTS) but also to take advantage of the change in order to design a solid basis that facilitates the acquisition of skills and abilities needed to develop competencies, including lifelong learning, desired for a complex and changing environment (e.g., AICPA, 1988; AECC, 1990, IFAC, 1996, 2003).

This paper has its origins in a pilot project for the implementation of the ECTS in the *Management of Tourism Businesses* (MTB) Bachelor degree program at the University of Seville.

Tourism sector is especially relevant in Spain. According to data provided by the IET (2008), tourism in Spanish generates revenues of 51,100 million dollars, which represents approximately 11% of GDP (Actualidad Económica, 2008). Also, the tourism balance of payments showed a surplus of 27,444 million Euros in 2006, helping to partially offset the trade deficit, and gave jobs to 1,357,000 people in 2005 (INE, 2008). Due to the relevance of this sector, a specific degree was introduced by the RD 604/1996, which established the *Diploma Management of Tourism Businesses* (MTB hereinafter) and the basic curriculum guidelines. The main purpose of this degree is “to provide theoretical and practical training appropriate to the management of organizations and institutions related to tourism”.

In the University of Seville, Management Accounting for Tourism Organizations (MATO hereinafter) is a compulsory subject, taught in the second year of the degree with a clear professional and practical orientation. The main objectives of the subject are related to the gathering, elaboration, communication and use of accounting information for management purposes. These functions require that, in addition to professional expertise (Accounting, Business Organization, Information Systems, etc.), the students should also develop critical thinking, communication and teamwork skills. They should develop these skills (Arquero, 2000; Hassall et al. et al., 2005) along with the technical knowledge throughout university education. In order to achieve the combined development of content knowledge and non-technical skills, we consider the use of empirically based case studies is an appropriate tool (Cullen et al., 2004).

To achieve this, the student is required to develop a field study in which she/he interacts with company managers,

working with real-time decision making and information processes in all their positive and negative aspects. As a result, students are expected to develop their critical thinking as well as their teamwork, communication, IT, and presentation skills.

In this paper, we present the results of a longitudinal extensive experience of educational innovation carried out during the academic years 2004-2005 to 2007-2008 in the MATO subject. This innovation consisted on the development of group case studies by students. As indicated above, the main objectives of the innovation were not a formal adaptation to the ECTS system, but the development of non-technical skills and the improvement of content learning and motivation. For data gathering, we employed an already validated and earlier used survey questionnaire to collect the opinions of the participants in the experiment (Arquero et al., 2004; Escobar & Lobo, 2007).

In the remainder of the paper, we describe the antecedents of the experiment and the experiment itself in the first two sections. In the third Section, we present the objective of the paper and the justification of the choice to use case Studies to develop the experiment. In the fourth Section, we present the results, and provide the conclusions in the final Section, followed by the bibliography.

## Background and description of experience

According to the Bologna Declaration (1999) and subsequent documents (e.g. Tuning Project, 2007; Bologna Working Group on Qualifications Frameworks, 2005), a general distinction can be made between generic outcomes (transversal skills) associated with all holders of a qualification and specific outcomes associated with disciplines and fields of learning and their particular qualifications. Both the Tuning project and the shared qualification descriptors (Dublin descriptors), that were developed within the Joint Quality Initiative (JQI), include generic competences (skills and knowledge) and attributes such as the capacity to learn, the capacity for analysis and syntheses, etc.

In the same line, but focused in the accounting area, relevant stakeholders highlighted the growing importance of such transversal (non-technical) skills for the accounting profession in their published statements about accounting education (Hassall et al., 2005).

Although universities know the relevance of these skills, in Spain there is still a significant gap between educational outcomes and current needs as perceived by employers (Arquero 2000, Arquero et al., 2009). Employers,

managers and alumni express those opinions in the external assessment reports for management university degrees (Escobar et al., 2004). The reduction of this gap, which is of the highest relevance for any degree (Ottewill and Macfarlane, 2003) is vital for Accounting—an applied discipline professionally oriented, in which closer relationships between students, teaching staff and profession could lead to a mutual enrichment (Escobar & Lobo, 2008).

Research results from the area of Business Administration (Dacko, 2006; Evans, 2008) and Accounting (Arquero, 2000; Arquero et al., 2001, Hassall et al., 2005; Milner & Hill, 2007) provide evidence that supports those statements. They indicate communication (both oral and written), teamwork and problem solving skills are of the highest importance for future graduates and we considered them essential for an adequate development of professional tasks.

In order to reduce the mentioned gap, we have implemented a teaching strategy characterized by: (1) encouraging in the students a more active role in their own learning process (Marcelo, 1995); (2) the guidance of students' learning to the understanding and practical application of concepts by a combination of individual and group work in real setting experiences (Mayor, 1995); (3) the integration of a pool of different teaching methods (Brown and Atkins, 1988) to make use of their advantages in order to improve the motivation of students and achieve a closer relationship with the professional requirements they will face in their professional future.

The methods used were as follows: the theoretical content was taught in well-structured classes, which seek to generate understanding and motivate students to participate in class. Illustrations from real firms up to date are regularly used in order to improve motivation and to link theoretical contents with real world examples. In practical classes, the teacher makes a brief reminder of the theoretical foundations to implement and oversee the

development of the class. The practical classes have two main activities, both solved in groups: (1) the students have to solve, present and discuss in class small cases and exercises, previously assigned and (2) students must conduct a real case study throughout the course.

We consider case study the most suitable instrument for the stated aims. Case studies have been proposed by relevant accounting bodies (v.g. AAA, 1986; IFAC, 1996) and many authors (see table 1) as an adequate method for the integrated acquisition of theoretical knowledge and skills development, as well as a way to increase perceived usefulness of the contents and motivation. Furthermore, as indicated by Marriott and Marriott (2003), case studies allow the student to better understand the accounting profession.

In particular, some authors have empirically used based case studies, in conjunction with lectures, with successful results in terms of content acquisition and skills development (Cullen et al., 2004). The monitored conduction of those cases also allow the use of an Action Learning approach (Revans, 1983; Pell, 2001; Hand, 2004), as the students work in small groups to learn through analysis of business practice by studying real situations and at the same time, they also learn by sharing their thoughts and reflections on the cases (Pell, 2001).

We structured the empirically based case study as follows. The teacher asked students to form groups of three. Once the groups were formed, the teacher provided the students with a brief description of a particular firm that was assigned to a group to conduct the case study. Selected firms have their domicile, or at least an establishment, in the city. No firm was assigned to more than one group, and firms covering all tourism sectors were selected. This description included:

- Data extracted from the financial statements of the firm.

TABLE 1. Advantages of case studies.

Argyris (1980)	Easton (1992)	Libby (1991)
Hear other points of view. Confronting differences. Make decisions. Be aware of the complexity of reality. Appreciate the lack of absolutely right or wrong answers.	Improvement of learning content. Non-technical skills Development: Analytical, decision making, communication, social, self-analysis. Changing attitudes.	Affective level Motivation Interest in the materials Development of trust Capacity building Written and oral communication Interaction Group Cognitive Level Development of problem-solving skills Ability to deal with ambiguity Understanding of reality

Source: Hassall et al. (1998).

- Economic sector in which the firm operates.
- Data to contact the firm.

A second step was to facilitate students a guide to conduct the study. Following this guide, the students had to gather information about the firm, the sector, competitors, etc. from different sources: public domain, information published by companies (brochures, financial statements, etc.), press news, Internet, etc. They also have to collect internal information about the firm through interviews, questionnaires, etc.

Once the information was collected, the group has to analyze it in order to prepare a preliminary report. The preparation of this report was supervised in scheduled formal interviews (two per semester) by the teacher during the tutoring hours. In these interviews, the teacher assessed the evolution of the project, according to the guide, and provided continuous counselling and assessment.

Once the group has written a final version of the report, they have to submit it to the teacher along with an initial version of a presentation in PowerPoint or equivalent. The final report for each case study should include:

- description of the firm, including economic and financial data,
- the organization chart, identifying, in this chart, who is in charge of preparing and who is using financial and management information,
- an analysis of which management accounting tools were used in the firm have,
- a critical opinion about the firm situation, the suitability of the management accounting tools and processes used, and recommendations for improvement.

After all the reports and presentations were collected, all of them were uploaded in the web page of the subject. Therefore, all students enrolled in the subject had access to all cases and presentations. In addition, the teacher made public the list of groups that were selected (randomly, but assuring that every sub sector of the industry were represented in a case) to present their work on a seminar, during the last two sessions of the course.

In the seminar, only the selected groups have to present their results. However, all the students were encouraged to participate by discussing and comparing results and procedures with their own cases. The group presenting

had the obligation to answer and clarify the questions asked by their colleagues or by the teacher.

### **Purpose, instrument and sample**

The main aim of this paper is to study the impact of the use of empirically based case studies on the acquisition of content knowledge, the development of non-technical skills and in the motivation of the students. This impact is assessed through a longitudinal study from 2004-2005 to 2007-2008 academic courses.

The instrument used for data collection was a self-assessment questionnaire developed under the supervision of the Institute of Educational Sciences at the University of Seville after several years of experience with educational innovations. The questionnaire was used to measure the opinion of all students participating in the experience during the last seminar dedicated to the class discussion of the cases developed by the groups. Other authors have previously used this instrument to assess educational innovations, among others issues, in Financial Accounting (Arquero et al., 2000 & 2004) and in Management Accounting subjects (Escobar and Lobo, 2007).

The questionnaire was designed to provide information on the students' opinion about the impact of educational innovations in several relevant aspects and it is structured as follows:

1. Demographic Data: gender, age and work experience.
2. Opinions items. Compose the core of the questionnaire and consist of 27 questions to be answered in a 5 point Likert scale (1 strongly disagreement, 2 disagree, 3 neutral, 4 agree and 5 total agreement). This part was divided into five sections:
  - 2.1. General assessment of the activity.
  - 2.2. Motivation.
  - 2.3. Skills development.
  - 2.4. Content learning.
  - 2.5. Characteristics of the activity.
3. Three open questions for students to highlight the best and the worst aspects of the innovation, as well as perceived ideas for further improvement.

The sample was composed of all students enrolled in the subject of MATO for the Diploma in Tourism at the Uni-

versity of Seville during the period of 2004 to 2008 who have participated in the activity.

## Results

The total number of questionnaires analyzed in this longitudinal study was 414 (from 2004-2005 to 2007-2008 academic courses). This represents 24.6% of the total of students enrolled in the subject. The number of participants, by gender is: 329 women and 85 men (Table 2). To check if there are differences in participation by gender we performed a chi-square test comparing the distributions of participants and non-participants by gender. The results indicate that there were no significant differences in activity participation.

Table 2: Participation in activity by gender.

	Males	Females	Total
No participants N	276	993	1269
Percentage	21.7%	78.3%	100.0%
Participants N	85	329	414
Percentage	20.5%	79.5%	100.0%

The overall assessment of the experience was good (Table 3)—all the means are significantly higher than 3 (point of indifference to the scale used). The score given to question 7 is especially relevant—the students indicate that the participation of the groups in class made them more interesting.

Regarding the differences by gender, in general, male students give higher scores to questions of general as-

essment. However this difference was significant only on question 5 (I think that the time devoted to the activities has been worthwhile;  $t$ -test sig. <5%) and in the aggregate of all items ( $t$ -test  $p$  <5%).

In the section devoted to motivation, the results are also quite encouraging (Table 4). All means are significantly higher than 3 and it is noteworthy that in three items the means are higher than 4. Thus, students highlighted that the activity motivated them to work harder (question 1), to become more involved in the subject (question 3) and changed their vision of the student as passive actor in the learning process (question 27).

In general, male students perceive a greater impact in its motivation due to the activity. However, these differences are not statistically significant.

The results are equally positive on the impact of activity on the development of non-technical skills (Table 5). In particular, students indicated that the activity helped them to develop analysis and critical skills of (question 14), improved their ability to work in groups (item 16), and lead them to a higher participation in classes (question 26). It is to be noted the perceived improvement in their oral presentation skills (question 17, which reached 4.11) one of the most important skills, according to published literature (Arquero, 2000, Hassall et al., 2005, Arquero et al. 2009).

In this case, unlike the previous two sections (general issues assessment and motivation), women perceive a higher incidence of the activity in the development of

Table 3: General assessment of the activity by year and gender.

Question	Total	04-05	05-06	06-07	07-08	Male	Female
5 I think that the time devoted to the activities has been worthwhile	3.62	3.74	3.62	3.46	3.73	3.81	3.57
6 I think the generalization of other subjects in the ECTS system would improve the quality of university teaching	3.73	3.91	3.66	3.63	3.79	3.96	3.68
7 The active participation of groups make classes more interesting	3.86	3.94	3.75	3.79	3.98	3.99	3.83
Total questions	11.24	11.59	11.03	10.97	11.50	11.75	11.12

Table 4: Motivation items by course and gender.

Question	Total	04-05	05-06	06-07	07-08	Male	Female
1 Activity motivated me to work harder in the subject	4.29	4.31	4.17	4.33	4.33	4.34	4.28
2 Activity improved my opinion on the content of the subject (practical vision)	3.98	3.94	3.91	4.05	4.00	4.05	3.97
3 I feel more involved in this subject than if the activity was more theoretical (usefulness vision).	4.26	4.31	4.10	4.28	4.36	4.31	4.25
4 Activities increased my interest in accounting	3.49	3.64	3.32	3.49	3.55	3.64	3.47
27 Activity changed my vision on the role of student as a passive receptor of information.	4.11	4.06	4.02	4.24	4.07	4.11	4.11
Total Questions	20.12	20.24	19.52	20.35	20.33	20.42	20.06

non-technical skills for the majority of the questions. However, these differences did not become statistically significant.

Analyzing the results by academic year, in general, the results are consistent through the years. Only in a specific academic year (2005-2006), some items obtained a lower mean, although always presenting levels significantly higher than 3. Those differences are significant for the questions 16, 17 and 26 (Anova sig <5%).

The results exhibited in table 6 also indicate that the impact perceived by students in the learning of technical content is positive. It is to be noted that students indicate an increased connection between the new material and prior learning (questions 8 and 9, with averages above 4). This result is quite encouraging in terms of meaningful learning. According with constructivist theory of learning, the higher the number of connections between new contents and consolidated knowledge the more meaningful the learning is. In the same line, students perceive a significant improvement in understanding (question 10) and enrichment of their own opinions with the alternative visions provided by their peers (question 23), which is in the core definition of collaborative learning. As indi-

cated by stakeholders and supported by research, a global vision of the firm is essential for a graduate. The results are also promising in this aspect: students indicate a relevant improvement in the interconnections of the contents covered in the subject with contents that are taught in other modules (question 11).

Comparing scores by gender, the differences are very small and not statistically significant. Analysing the scores by course, the results have remained constant over time with no significant differences.

The last section of the core included questions about the activity (Table 7). Students stressed that they found the activity interesting (question 19) and allowed them to share ideas and views with their peers and teacher (question 22). They also believe that the implementation of these innovations is a good indicator of the interest of the faculty for the quality of the learning-teaching process (question 20).

As a negative aspect, the students highlight that there are colleagues who take advantage of the effort of the group (question 25), without providing enough to collective work.

Table 5: Development of non-technical skills items by course and gender.

Question	Total	04-05	05-06	06-07	07-08	Male	Female
14 Activity helped me to develop analysis, synthesis and critical skills.	4.01	4.11	3.88	3.97	4.10	4.04	4.00
15 Activity helped me to develop information search, library resources and IT skills.	3.80	3.89	3.69	3.75	3.90	3.69	3.83
16 Activity improved my skills to work in teams.	4.00	4.04	3.74	4.09	4.09	3.95	4.01
17 I have improved my abilities to present, defend and debate opinions in public.	4.10	4.29	3.83	4.07	4.23	4.11	4.11
18 I have improved my abilities to write a report through this activity.	3.73	3.89	3.66	3.71	3.72	3.65	3.78
26 Presentations make the participation in debates easier.	3.95	3.94	3.72	4.01	4.09	3.81	4.00
Total questions	23.58	24.15	22.52	23.61	24.13	23.25	23.73

Table 6: Improvement of content learning by gender and course.

Question	Total	04-05	05-06	06-07	07-08	Male	Female
8 Activity helped me to connect new concepts and information with other knowledge previously learnt.	4.15	4.25	4.00	4.13	4.23	4.12	4.17
9 Activity helped me to use learnt concepts to understand new knowledge.	4.04	4.17	3.94	4.00	4.07	4.01	4.05
10 Activities helped me to understand, widening and relate my ideas.	4.14	4.16	4.07	4.18	4.14	4.13	4.16
11 Activities helped me to connect contents of this subject with concepts and contents of other subjects.	3.71	3.75	3.70	3.70	3.72	3.72	3.71
12 Activity helped me to question, to be critical and discuss them	3.76	3.85	3.83	3.62	3.82	3.72	3.78
13 Activity was useful to learn from other students' points of view on concepts and problems.	3.74	3.92	3.72	3.56	3.87	3.85	3.72
23 The debate of the different opinions enriched my knowledge with alternative views.	3.98	4.03	3.99	3.93	3.99	3.91	4.00
Total questions	27.52	28.13	27.25	27.11	27.86	27.45	27.58

To check whether a relationship exists between the development of non technical skills, content learning, motivation and evaluation of the activity, we performed a correlation analysis (Table 8).

The results indicate a very strong correlation and statistically significant at 1%. The correlations are highest between motivation and general assessment, and between motivation and content learning, both with more than 60% of correlation. In addition, the correlation coefficient between motivation and development of non technical skills is 59%.

In general, according to the views expressed by the students, the results suggest a positive and relevant impact of the experience in the improvement of learning process in an integrated way, in line with what the AAA (1986) and IFAC (1996) advocate. Positive and interconnected development of content knowledge, non technical skills and improvement in motivation was attained by using

empirically based case studies. The results are also indicative of a positive effect on meaningful and collaborative learning and, in general, terms, the activity is positively assessed by students.

The final part of the questionnaire consisted of three open questions (positive and negative aspects of the experience and ideas for improvement). Students identified, as the most positive aspect of the experience the connections of the content knowledge with “real world” settings. This is quite interesting, given that, the perceived usefulness of contents is a key motivational factor in order to achieve meaningful learning (Arquero & Jiménez, 1997).

As the most negative aspect, students highlighted the difficulty of working in groups, mainly because of conflicts that arise among its members. Finally, they indicated two aspects that needed to be addressed. As many subjects require the development of task to be solved in

Table 7: Characteristics of the Activity.

Question	Total	04-05	05-06	06-07	07-08	Male	Female
19 Cases presented in class by my colleagues have been interesting.	3.88	3.87	3.93	3.86	3.85	3.93	3.85
20 In general, I think this activity reveals the teacher's concern for quality teaching.	3.99	4.08	3.83	4.00	4.06	3.95	4.01
21 Through the activities we discuss alternative solutions to cases and problems.	3.95	3.97	4.02	3.91	3.92	3.87	3.97
22 The activity allows sharing the ideas, responses and points of view with my colleagues and teachers.	4.11	4.25	3.96	4.14	4.12	4.12	4.12
24 My experience indicates that people interact well in groups.	3.65	3.86	3.65	3.61	3.55	3.62	3.66
25 There are colleagues who behave as “free riders” and do nothing for the group	4.02	3.68	3.85	4.21	4.21	3.85	4.08
Total issues (question 25 inverted)	21.56	22.35	21.55	21.28	21.29	21.58	21.55

Table 8: Correlations analysis.

Spearman's Rho		Motiva	Skills dev.	Content learn.	Act. grade	Total grade
General assessment	Coef.	.685	.536	.623	.445	.193
	Sig. (2 tail)	.000	.000	.000	.000	.000
	N	409	412	407	415	359
Motivation	Coef.		.598	.723	.501	.266
	Sig. (2 tail)		.000	.000	.000	.000
	N		417	412	416	359
Skills development	Coef.			.633	.418	.210
	Sig. (2 tail)			.000	.000	.000
	N			415	419	362
Content learning	Coef.				.479	.188
	Sig. (2 tail)				.000	.000
	N				414	357
Activity grade	Coef.					.516
	Sig. (2 tail)					.000
	N					365



groups, appropriate spaces to meet and work in groups should be provided. In addition, deadlines and workloads should be better coordinated among subjects, in order to avoid overlapping or peaks of workload.

### Findings and discussion

In this paper, we analyse the impact of an educational innovation on content learning, skills development, and students' motivation. According to the published statements of relevant Accounting bodies and stakeholders, these issues are becoming crucial challenges for Accounting Education. The implementation of the new European Higher Education Area should be considered an opportunity to redirect accounting education objectives towards new social demands.

With the innovation project in MATO, we tried not only to improve content learning and students' motivation, but also the development of non-technical skills such as oral and written communication, teamwork and problem solving. All these skills are considered of high relevance for students' professional future.

We have implemented this pedagogical innovation, using empirically-based case studies as main core of the teaching strategy. The cases were worked on in groups of three students and focused on the management information system in tourism organizations within their real business contexts.

To overcome limitations pointed out in similar previous work (Arquero et al., 2001), we carried out a longitudinal



study, covering the academic courses from 2004-2005 to 2007-2008, in order to determine the long-term effects of these empirically based case studies on content learning, skills development, and students' motivation.

The results indicate a consistent positive effect over time. The results of the longitudinal analysis of the questionnaires shows that the experience had a strong positive effect on (1) the development of non-technical skills, especially the improvement of oral and written communication, teamwork and analysis, synthesis and critical skills; (2) content learning, in particular an improvement in meaningful learning (using acquired concepts to understand new knowledge and connecting contents from different subjects) (3) the motivation of the students, notably that students were motivated to work harder on the subject and felt more involved in the course activities.

When analyzing the results with respect to academic courses and to gender, some statistically significant differences were found. In general, male students assessed the project more positively in its impact on their motivation than did female students; the latter showed themselves more critical. As for the effect of the project on the development of non-technical skills, the results by gender reveal the opposite: female students indicate a higher po-

sitive impact on the development of such non-technical skills than did male students.

Other significant outcomes of this innovation project arose from the side of teaching staff. They became very positively impressed because the project allowed students to acquire a better understanding of tourism business practice within its real context while working in a continuous dynamic over the full academic course. This process took advantage of group interactions and overcame learning inertia under an action-learning logic. It generated new, empirically based materials to use them in subsequent courses when explaining theoretical concepts, and, finally, contributed to reducing the gap between accounting classroom teaching, business practice, and research.

As a final remark, we believe it worthwhile to conduct further research studies supplementing this quantitative analysis with qualitative evidence that analyzes issues related to the innovation project. For example, conducting in-depth interviews with a number of participants, selected on the basis of defined demographic profile data from the questionnaire, would provide additional insight on the effect of the innovation in learning outcomes as well as a deeper knowledge on ways to improve the experience.

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