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# Longitudinal Analysis of Students' Readiness for b-Learning Courses: Implications for the European Higher Education Area

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## 1. Introduction

Information and Communication Technologies (ICTs) are fostering great changes in diverse social and economic settings (Alba et al. 1997; Hoffman & Novak, 1996; Parasuraman & Colby, 2001). Researchers from different academic fields are analyzing the effects of Internet technologies in several areas: commercial transactions (e-Commerce), contacts with the public administration (e-Government), provision of health services (e-Health), and education processes (e-Learning) (Bitner et al., 2000; Gefen & Straub, 2003; Yarbrough & Smith, 2007).

For learning and training purposes, the implications of new information technologies are evident in students' learning processes, teaching methodologies, and the interactions between lecturers, students, and pedagogical materials. New digital services offer great possibilities for educational purposes, in terms of the management and supply of contents to students, as well as a higher potential to continually monitor students' progress. Two main applications of Internet technologies should be highlighted in higher education settings (Tiffin & Ragasingham, 1997):

- a) Mixed systems (*b-Learning* or "blended learning"), which combine more traditional presence-based teaching with *online* learning methodologies;
- b) Complete systems (*e-Learning*), in which distance education relies solely on the use of Internet technologies, both for student tutoring and delivery of contents.

A review of digital technologies' main characteristics for educational purposes suggests the existence of a significant overlap between certain requirements of the European Higher Education Area, such as the ECTS credit system, and the potential of e- and b-learning services: remote management of students; time flexibility in students' work; reduction in the volume of contents; higher emphasis on continuous evaluation; combining classical (presence-based) education with auto-study and practicals; and the possibility of real-time "student-lecturer" contacts (presence-based, videoconferences, chats, or IP phone calls), and delayed contacts (debate forums and e-mail). In this context, new information technologies

are expected to play a pivotal role in aiding students to accomplish more autonomous learning activities.

Thus, the application of e- and b-learning approaches is increasingly being promoted by European, national, and regional public authorities. The European Parliament and Council, in the Decision Number 2318/2003/CE of 5th of December 2003 (European Commission, 2003), paid considerable attention to the development of virtual higher education campuses, which should contribute to the effective integration of new information and communications technologies into Europe's education and training systems (e-Learning Programme).

The document "*La Integración del Sistema Universitario Español en el Espacio Europeo de Enseñanza Superior*" -The Integration of the Spanish University System into the European Higher Education Area- (Ministerio de Educación, Cultura y Deporte, 2003) acknowledges that substantial institutional and structural modifications are needed for the adaptation to the European Higher Education Area. Such changes should, within an information and knowledge society, "help universities face the challenges derived from innovation in the creation and dissemination of knowledge" (Ministerio de Educación, Cultura y Deporte, 2003).

Proper attention should also be given to the personal traits of certain individuals, specially students and lecturers, because of their key role in the adaptation process to the European Higher Education Area. Adequate levels of readiness, perceptions, and attitudes towards online learning (Featherman & Pavlou, 2003; Taylor & Todd, 1995), among students and lecturers, are needed to ensure a successful application of Internet-based services into courses currently being adapted to the European Higher Education Area. This paper will focus on the analysis of students' perceptions and readiness for online learning. Future studies should also examine lecturers' readiness for e- and b-Learning.

In particular, this paper contributes to the analysis of students' readiness for online education (in this study, *b-Learning* or "blended learning"), by presenting the results of a longitudinal analysis carried out among students of the following b-learning courses, offered at the University of Almería (Spain) between the years 2006 and 2008: "International Trade" (Business Administration Studies), "Public Relations and Protocol" (Tourism Studies), and "Tourism Marketing Research" (Tourism Studies).

## 2. Research Purposes and Methods

In this section, the authors describe the main purposes and methods selected for data collection among students of the b-learning courses "International Trade", "Public Relations and Protocol", and "Tourism Marketing Research". All three courses were taught online, using the WebCT 4.0 e-Learning platform. 75% of theoretical and practical credits were virtualized, which represents the maximum degree of virtualization allowed at the University of Almería for b-learning courses.

### 2.1 Students' Workload

Excessive workload has been identified as a common barrier for student learning and success, both in online courses (e- and b-Learning), and in those currently being adapted to the requirements of the European Higher Education Area (Ministerio de Educación, Cultura y Deporte, 2003). In fact, an excessive amount of coursework has been identified as a key

factor leading to student withdrawal in e-learning courses (Packham et al., 2004). Therefore, lecturers and designers of e- and b-learning courses should adequately analyze and adapt the levels of difficulty and workload for students. Due to current processes of convergence to the European Higher Education Area, students' working time requirements should adhere to the usual recommendations of 25 to 30 student working hours per ECTS credit.

To analyze the amount of students' coursework, students were asked to estimate the time dedicated to the different course activities, in the courses "International Trade", "Public Relations and Protocol" (academic years 2005/2006, 2006/2007, and 2007/2008), and "Tourism Marketing Research" (academic year 2007/2008). In this regard, students were asked to provide the following information along with each course activity:

- Amount of time dedicated to study.
- Time dedicated to prepare the activity (e.g., searching for information and additional resources)
- Time dedicated to writing.
- Time needed for presentation / sending.
- Brief comment on the contribution of the activity to students' learning.

## 2.2 Attitudes, Readiness, and Perceived Barriers for Students

A review of previous literature confirms the complexity of individuals' acceptance (resistance) and adoption (rejection) processes of information systems (Burton-Jones & Gallivan, 2007; Lapointe & Rivard, 2005). In this regard, the integration of *online* learning systems into higher education requires a proper understanding of diverse factors potentially influencing students' and lecturers' acceptance of e- and b-learning systems.

Particularly, further research is needed into students' attitudes, readiness, and perceived difficulties in b-learning environments. In this sense, factors related to students' perceived difficulties, lack of adequate training (Taylor & Todd 1995; Venkatesh 2000), or the level of learning actually acquired in online courses, compared to traditional presence-based ones, have been linked to student failure in e-learning courses (Packham et al. 2004).

During the second semester of the academic years 2006/2007 and 2007/2008, a brief questionnaire was used to obtain information about the attitudes, readiness, and potential barriers for students taking part in the b-learning courses "International Trade" and "Public Relations and Protocol". To facilitate the data collection process, this questionnaire was included in a "control test" that students had to pass at the middle of the semester. The following issues were addressed in this brief survey:

- Availability of computer at the usual study place.
- Availability of Internet access at the usual study place.
- Ease of access to computers at the college campus.
- Difficulty of b-learning courses, compared to traditional ones.
- Needed dedication to b-learning courses, compared to traditional ones.
- Understanding of b-learning courses, compared to traditional ones.
- Learning acquired in b-learning courses, compared to traditional ones.

3. Results

This section describes the results obtained in the longitudinal analysis of students’ coursework perceptions, as well as their attitudes, readiness levels, and perceived barriers for success in b-learning environments.

3.1 Analysis of Students’ Workload

As shown in Table 1, during the academic year 2005-2006, the estimated working time that each student had to dedicate to the “Public Relations and Protocol” and “International Trade” courses represented 107 and 127 hours, respectively. Several modifications to the structure of both courses contributed to reduce the estimated working hours during the year 2006-2007: 87 working hours in “Public Relations and Protocol” and 114 hours in “International Trade”.

Course	Total Hours		
Public Relations and Protocol	2005/2006	2006/2007	2007/2008
Estimated Working Time	107	87	80-90
International Trade			
Estimated Working Time	127	114	100-110
Tourism Marketing Research			
Estimated Working Time	-	-	95-105

Table 1. Longitudinal comparison of students’ coursework

In the academic year 2007/2008, the course “Tourism Marketing Research” (Tourism Studies) was added to the analysis of students’ workload. Data corresponding to this b-learning course, as well as “Public Relations and Protocol” (Tourism Studies) and “International Trade” (Business Administration Studies), evidence the existence of rather stable and reasonable estimations of students’ required work over time.

Taking into account that these are 6-credit courses, it is evident that none of the estimations of students’ working time surpass the usual recommendations of 25 to 30 student working hours per ECTS credit (González & Wagenaar, 2005; Lavigne, 2003). According to these recommendations, the total student workload should lie between 150 and 180 working hours in the analyzed courses. In fact, the estimations shown in Table 1 may suggest the need for increasing the work requirements in these three b-learning courses.

This would nevertheless be inconsistent with common student opinions and complaints about having to make too many activities during the semester. In this sense, a limited number of students in the courses “International Trade” and “Public Relations and Protocol” provided spontaneous comments or “complaints” pointing to the inclusion of an excessive number of practical activities throughout the semester.

3.2 Analysis of Attitudes, Readiness, and Perceived Barriers for Students

Next, this paper examines the attitudes, levels of readiness, and perceived barriers by students taking part in the courses “Public Relations and Protocol” and “International Trade”, during the second semester of the academic years 2006-2007 and 2007/2008.

3.2.1 Availability of computer at the usual study place

First, students were asked about the availability of personal computers (PCs or laptops) at their most usual study place. Considering that personal computers represent the most-widely used device to access the Internet, and computer usage is a prerequisite for participation in e- and b-learning courses, this variable should be still regarded as a key potential barrier for success in the b-learning courses analyzed in this study (see Table 2 and Figures 1 and 2).

	International Trade		Public Relations and Protocol		Total	
	2006/2007	2007/2008	2006/2007	2007/2008	2006/2007	2007/2008
Always	57 (68.7%)	45 (68.2%)	48 (70.6%)	50 (69.4%)	105 (69.5%)	95 (68.8%)
Sometimes	23 (27.7%)	15 (22.7%)	16 (23.5%)	16 (22.2%)	39 (25.8%)	31 (22.5%)
Never	3 (3.6%)	6 (9.1%)	4 (5.9%)	6 (8.3%)	7 (4.64%)	12 (8.7%)
Total	83	66	68	72	151	138

Table 2. Availability of computer at the usual study place

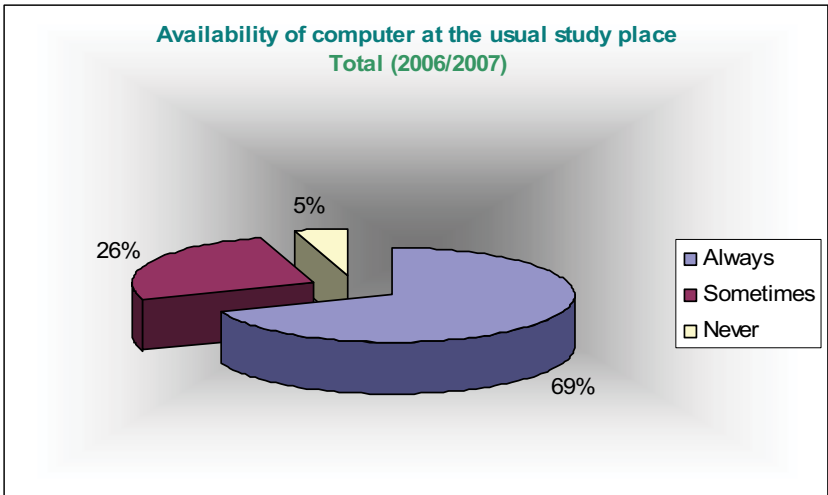


Fig. 1. Availability of computer at the usual study place (2006/2007)

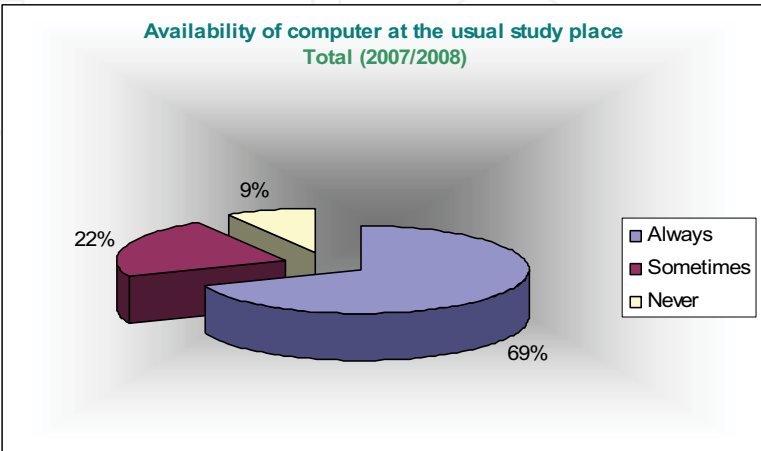


Fig. 2. Availability of computer at the usual study place (2007/2008)



The results reflect a very similar situation for students of both courses, which belong to different study programs (Business Administration and Tourism Studies). In the academic years 2006/2007 and 2007/2008, a majority of students (approx. 70%) states that they “always” have a personal computer available at their usual study place. Nevertheless, the total accessibility of personal computers at the place of study did not seem to be guaranteed for all students in the year 2006/2007, as evidenced by the fact that 25% of students could only access a computer “sometimes”, and 5% could “never” access one. Interestingly, despite continued policies and efforts of public authorities and private entities (especially of the University of Almería), aimed at ensuring and increasing student access to computers and the Internet, the situation does not seem to have improved in the year 2007/2008. Again, the percentage of students indicating that they can “never” or just “sometimes” access computers stays stable at 31%. Considering that previous data refer to students currently taking part in b-Learning courses, with 75% of virtual credits, such students should experiment much more difficulties during the learning process.

3.2.2 Availability of Internet access at the usual study place

Next, student were asked with regard to the availability of Internet access at their usual study place. As with personal computers, problems to access to Internet, whether at home, university campus, or other places, would represent a very significant barrier for successful participation in e- or b-learning courses (see Table 3 and Figures 3 and 4).

	International Trade		Public Relations and Protocol		Total	
	2006/2007	2007/2008	2006/2007	2007/2008	2006/2007	2007/2008
Modem	14 (16.9%)	14 (21.2%)	13 (19.4%)	15 (20.8%)	27 (18.0%)	29 (21.0%)
ADSL	53 (63.9%)	33 (50.0%)	41 (61.2%)	39 (54.2%)	94 (62.7%)	72 (52.2%)
No	16 (19.3%)	19 (28.8%)	13 (19.4%)	18 (25.0%)	29 (19.3%)	37 (26.8%)
Total	83	66	67	72	150	138

Table 3. Availability of Internet access at the usual study place

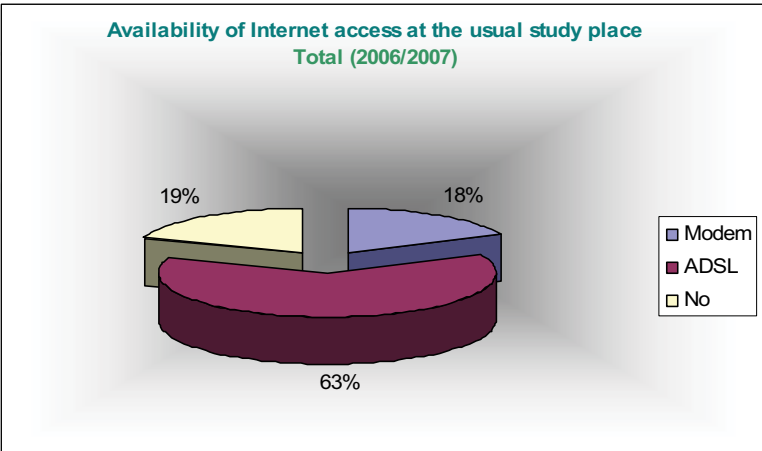


Fig. 3. Availability of Internet access at the usual study place (2006/2007)

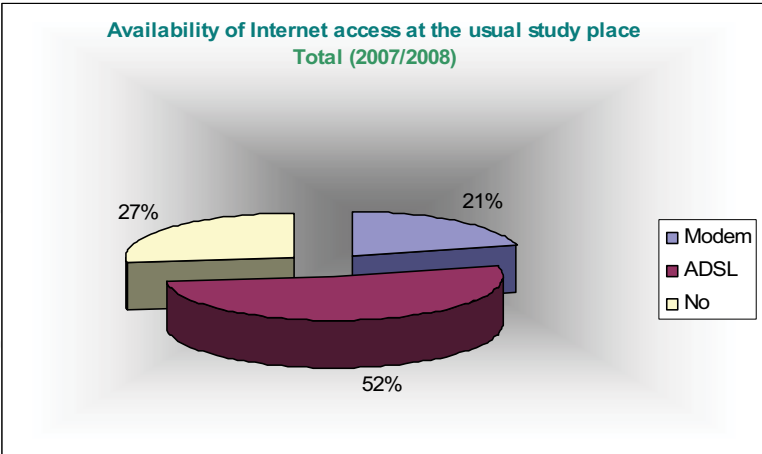


Fig. 4. Availability of Internet access at the usual study place (2007/2008)

The analysis of data of the “International Trade” and “Public Relations and Protocol” courses, reveals a practically identical situation with regard to the availability of Internet access at students’ usual place of study. Nevertheless, a negative evolution of the available types of Internet access can be observed over time. In the academic year 2006/2007, a significant share of students (19%) could not access the Internet at their usual study place. This percentage was even higher (27%) during the following academic year. As previously noted, this represents an important barrier to students’ content access, usage of communications tools, and performing of programmed activities on the WebCT e-learning platform. Careful attention should be paid to data related to student access to computers and the Internet, as b-learning courses include diverse practical activities throughout the semester, which must be properly made and delivered within designated times.

3.2.3 Ease of access to computers at the college campus

It is also interesting to examine how easy it is for students to access computers (PCs or laptops) at the university campus. This variable could be regarded as a partial measure of success obtained by policies and efforts, aimed at ensuring computer access in public universities (see Table 4 and Figures 5 and 6):

	International Trade		Public Relations and Protocol		Total	
	2006/2007	2007/2008	2006/2007	2007/2008	2006/2007	2007/2008
Always	46 (55.4%)	30 (46.2%)	21 (30.9%)	27 (37.5%)	67 (44.4%)	57 (41.6%)
Sometimes	36 (43.4%)	34 (52.3%)	43 (63.2%)	42 (58.3%)	79 (52.3%)	76 (55.5%)
Never	1 (1.2%)	1 (1.5%)	4 (5.9%)	3 (4.2%)	5 (3.3%)	4 (2.9%)
Total	83	65	68	72	151	137

Table 4. Ease of access to computers at the college campus



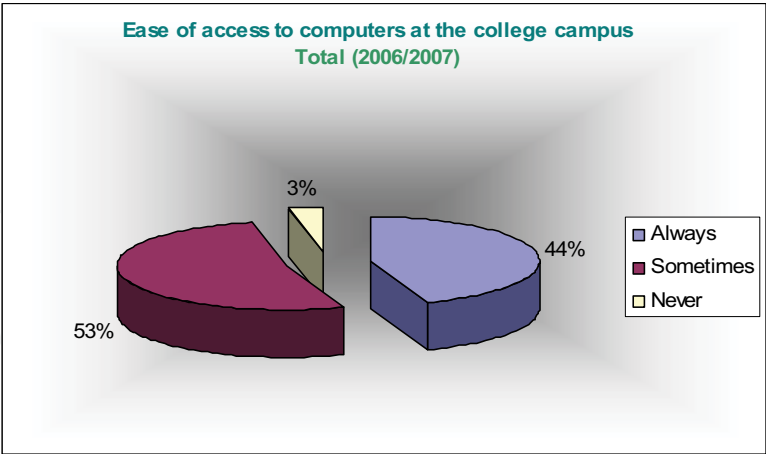


Fig. 5. Ease of access to computers at the college campus (2006/2007)

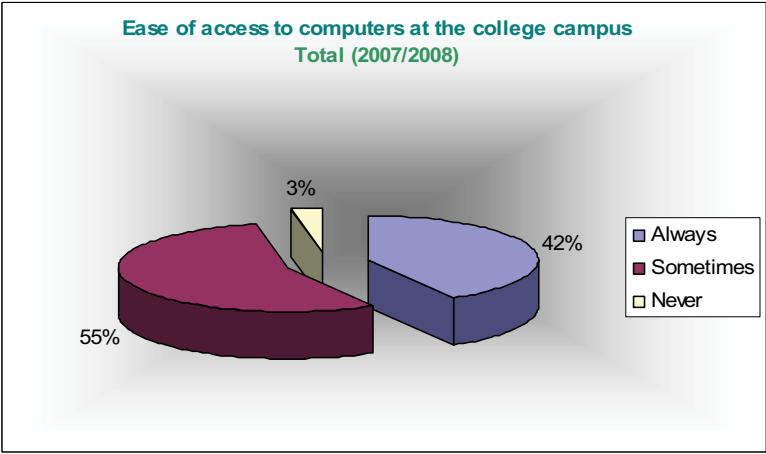


Fig. 6. Ease of access to computers at the college campus (2007/2008)

With regard to the ease of access to personal computers at the college campus, certain differences were observed during the year 2006/2007 between students of the analyzed b-learning courses. While 56% of students in the “International Trade” course indicated that they could “always” easily access personal computers at the campus, this percentage was only 31% for students of “Public Relations and Protocol”. These differences between courses were attenuated, according to the 2007/2008 survey, with 46% (International Trade) and 38% (Public Relations and Protocol) saying that they could “always” access with ease to computers at the university campus.

The comparison of total results, across the analyzed academic years, reveals similar response patterns over time. In global terms, the results suggest the existence of improvement potential, with regard to the policies put forward by the university, aimed at improving the availability of computer equipment for students. In this sense, over 50% of surveyed students in both courses, indicates that they can only access “sometimes” personal computers with ease at the college campus.

3.2.4 Difficulty of b-Learning courses, compared to traditional ones

A relevant aspect for the adequate planning of online or b-learning courses relates to the correct distribution of students' workload in each course. This is of paramount importance within the new teaching-learning framework of the European Higher Education Area, which regards students' work and learning as a central concern. In this context, students' opinions are examined with regard to the perceived relative difficulty of b-learning courses, compared to those using traditional teaching methodologies (see Table 5 and Figures 7 and 8):

	International Trade		Public Relations and Protocol		Total	
	2006/2007	2007/2008	2006/2007	2007/2008	2006/2007	2007/2008
Higher	37 (45.7%)	31 (47.0%)	37 (55.2%)	30 (41.7%)	74 (50.0%)	61 (44.2%)
Equal	38 (46.9%)	31 (47.0%)	25 (37.3%)	38 (52.8%)	63 (42.6%)	69 (50.0%)
Lower	6 (7.4%)	4 (6.1%)	5 (7.5%)	4 (5.6%)	11 (7.4%)	8 (5.8%)
Total	81	66	67	72	148	138

Table 5. Difficulty of b-Learning courses, compared to traditional ones

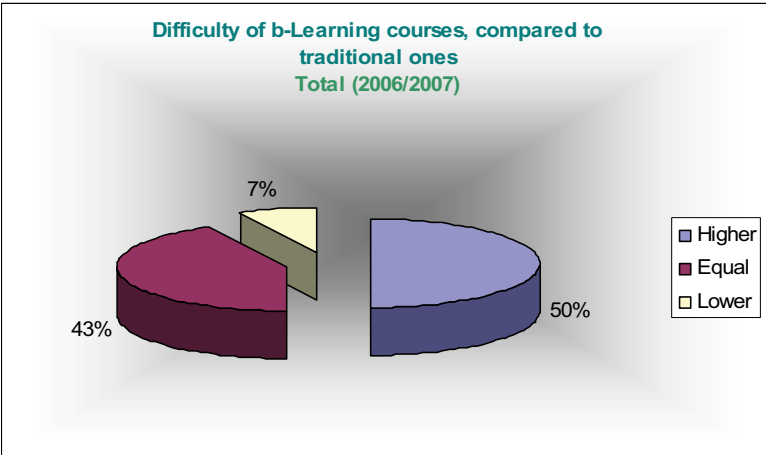


Fig. 7. Difficulty of b-Learning courses, compared to traditional ones (2006/2007)

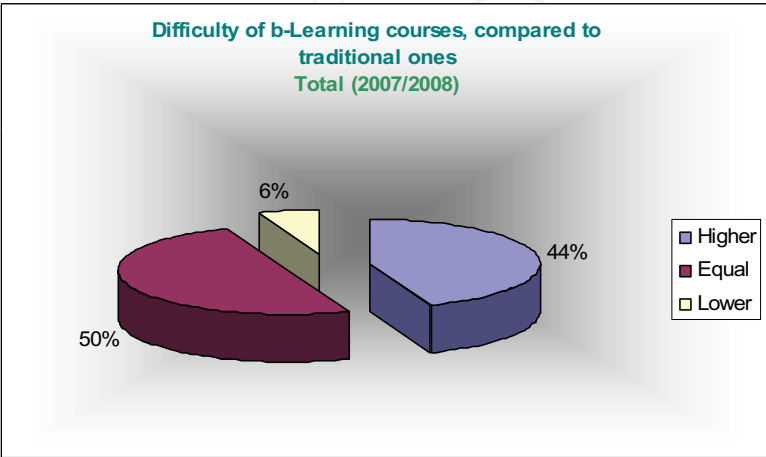


Fig. 8. Difficulty of b-Learning courses, compared to traditional ones (2007/2008)

The results of the 2006/2007 survey showed that most students perceive that the structure and methodology used in b-Learning courses involves a higher difficulty, compared to traditional courses. This perception was especially significant (56% of respondents) among Tourism students taking part in the “Public Relations and Protocol” course. The survey conducted during the year 2007/2008, reveals a slight improvement of students’ perceptions in both courses, with most students (approx. 50%) estimating an “equal” difficulty in b-learning and traditional courses.

During the year 2006/2007, an excessive load of activities seemed to be the main cause of students’ negative opinions, in particular among students of the “Public Relations and Protocol” course. Almost all additional comments spontaneously provided by students explicitly pointed to an excessive load of activities. The changes performed to the structure of this course may have contributed to more positive student opinions.

3.2.5 Needed dedication to b-Learning courses, compared to traditional ones

Considering students’ repeated opinions about an excessive amount of activities, an alternative method is used to estimate students’ workload in the “International Trade” and “Public Relations and Protocol” b-learning courses. In this regard, students’ were directly asked to estimate the necessary dedication to b-Learning courses, in comparison with traditional ones (see Table 6 and Figures 9 and 10):

	International Trade		Public Relations and Protocol		Total	
	2006/2007	2007/2008	2006/2007	2007/2008	2006/2007	2007/2008
Higher	59 (71.1%)	28 (43.8%)	42 (61.8%)	36 (50.7%)	101 (66.9%)	64 (47.4%)
Equal	19 (22.9%)	28 (43.8%)	19 (27.9%)	29 (40.8%)	38 (25.2%)	57 (42.2%)
Lower	5 (6.0%)	8 (12.5%)	7 (10.3%)	6 (8.5%)	12 (7.9%)	14 (10.4%)
Total	83	64	68	71	151	135

Table 6. Needed dedication to b-Learning courses, compared to traditional ones

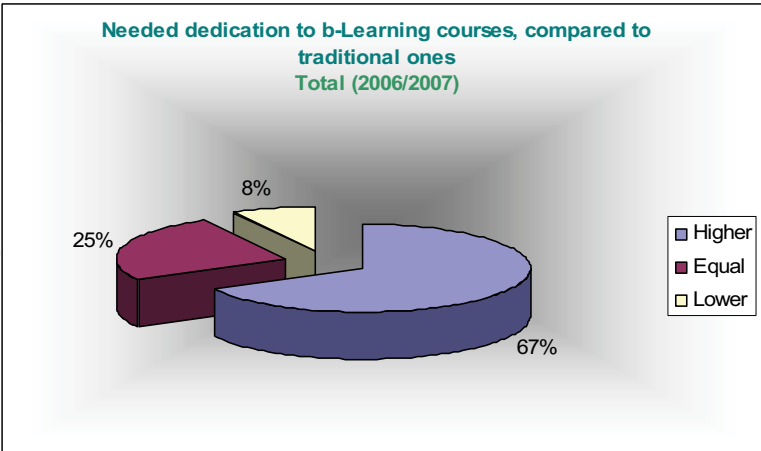


Fig. 9. Needed dedication to b-Learning courses, compared to traditional ones (2006/2007)

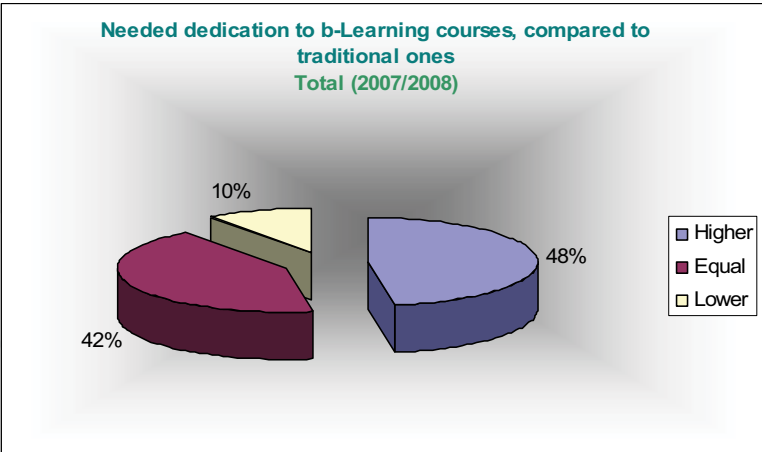


Fig. 10. Needed dedication to b-Learning courses, compared to traditional ones (2007/2008)

Consistent with the estimations of students’ workload, discussed in section 3.1, the results of the 2007/2008 survey evidence a relevant improvement of students’ opinions of the necessary dedication to pass b-learning courses, compared to traditional ones. In this sense, the percentage of students indicating the need for “higher” dedication and effort to b-learning courses, decreased from 67% to 48% between 2006 and 2008. This improvement was especially significant among students of the “International Trade” course, as a result of performed modifications. Again, these results emphasize the importance of a careful analysis and planning of the necessary student work in e- and b-Learning courses.

3.2.6 Understanding of b-Learning courses, compared to traditional ones

The sixth question of the survey analyzed students’ self-reported understanding of b-learning courses, compared to those using traditional teaching methods. The analysis of this indicator provides useful information on issues related to adequacy of contents or content structure, clarity of presentation, or design features of the analyzed courses (see Table 7 and Figures 11 and 12):

	International Trade		Public Relations and Protocol		Total	
	2006/2007	2007/2008	2006/2007	2007/2008	2006/2007	2007/2008
Higher	23 (27.7%)	8 (12.5%)	18 (26.5%)	14 (19.7%)	41 (27.2%)	22 (16.3%)
Equal	28 (33.7%)	24 (37.5%)	16 (23.5%)	31 (43.7%)	44 (29.1%)	55 (40.7%)
Lower	32 (38.6%)	32 (50.0%)	34 (50.0%)	26 (36.6%)	66 (43.7%)	58 (43.0%)
Total	83	64	68	71	151	135

Table 7. Understanding of b-Learning courses, compared to traditional ones

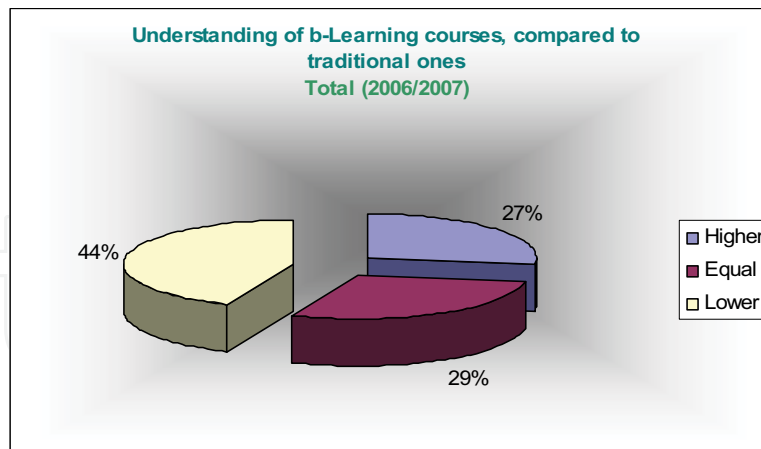


Fig. 11. Understanding of b-Learning courses, compared to traditional ones (2006/2007)

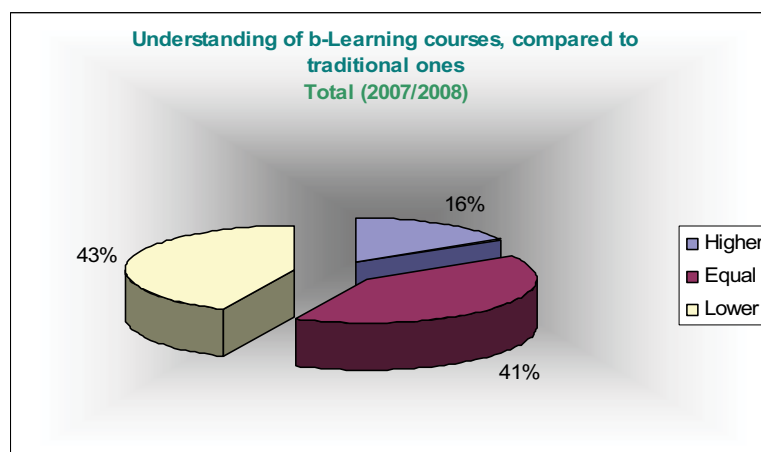


Fig. 12. Understanding of b-Learning courses, compared to traditional ones (2007/2008)

The 2006/2007 data showed the existence of student groups with different readiness or skills to successfully get through b-learning courses. In both courses, there was a similar share of students (around 27%) showing a better understanding of contents provided in b-learning courses, compared to traditional ones. Nevertheless, there was also a significant percentage of students (38% in “International Trade”; 50% in “Public Relations and Protocol”) showing a lower understanding of contents in online courses. In “Public Relations and Protocol”, the results especially pointed to the need for a careful review of the contents and formal structure of this course.

The results of the 2007/2008 survey reveal significant changes, compared to the 2006/2007 study. A lower share of students (16%, compared to 27%), state that their understanding of b-learning courses is “higher”, than in traditional ones. In this sense, there seems to be a shift towards the “equal understanding” response category. In contrast to the academic year 2006/2007, more negative responses were obtained among students of the “International Trade” course.

3.2.7 Learning acquired in b-Learning courses, compared to traditional ones

Finally, students were asked about their perceived levels of learning acquired in b-learning courses, compared to traditional presence-based ones (see Table 8 and Figures 13 and 14).

	International Trade		Public Relations and Protocol		Total	
	2006/2007	2007/2008	2006/2007	2007/2008	2006/2007	2007/2008
Higher	26 (31.3%)	15 (23.4%)	22 (32.4%)	18 (25.4%)	48 (31.8%)	33 (24.4%)
Equal	38 (45.8%)	37 (57.8%)	34 (50.0%)	37 (52.1%)	72 (47.7%)	74 (54.8%)
Lower	19 (22.9%)	12 (18.8%)	12 (17.6%)	16 (22.5%)	31 (20.5%)	28 (20.7%)
Total	83	64	68	71	151	135

Table 8. Learning acquired in b-Learning courses, compared to traditional ones

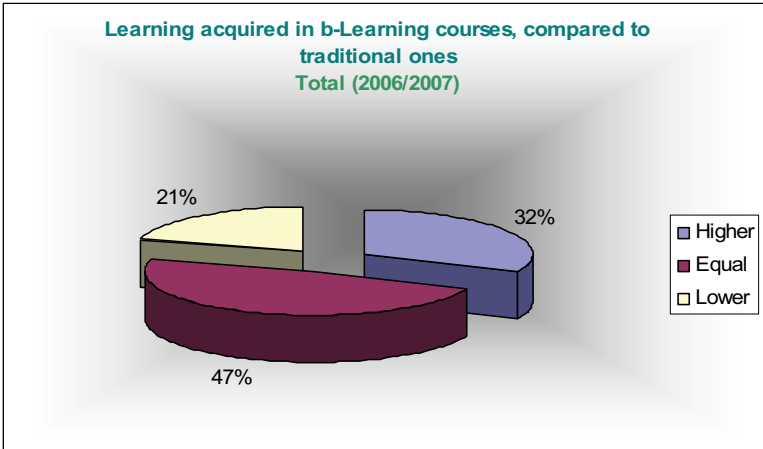


Fig. 13. Learning acquired in b-Learning courses, compared to traditional ones (2006/2007)

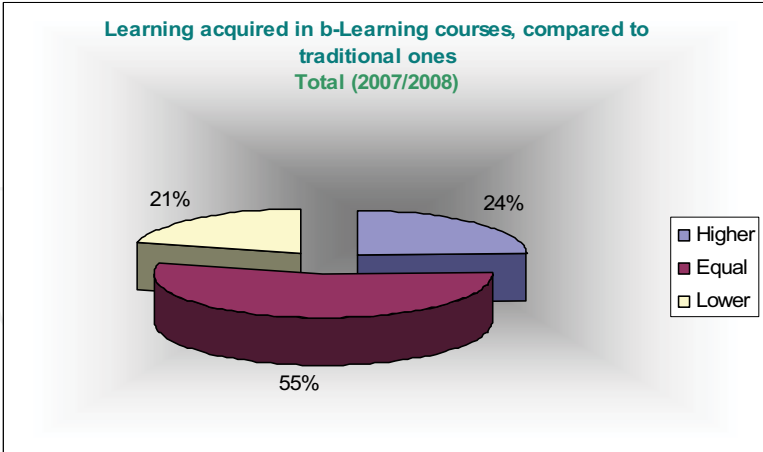


Fig. 14. Learning acquired in b-Learning courses, compared to traditional ones (2007/2008)

Similar results were obtained in both courses, with most students indicating that online and traditional teaching methods contributed to “equal” learning levels. The comparison of 2006/2007 and 2007/2008 data, reveals a shift of responses from the “higher” learning acquired in b-learning courses, to the “equal” response option. Students showing a negative



readiness or deficient skills to succeed in e- or b-learning courses, account for 21% of respondents in both academic years.

#### 4. Conclusions

The results obtained in this study emphasize the importance of a correct adaptation of difficulty and workload levels for students of b-learning courses, in order to properly reflect the requirements of the European Higher Education Area. Likewise, the formal structure of contents in e- and b-learning courses should also be properly designed, so that several detected problems can be avoided, such as a deficient understanding of contents and, as a result, lower student learning. Such modifications should lead to higher rates of student success, and minimize the probability of student withdrawal in online courses.

The analysis of student responses revealed several complaints about the inclusion of an excessive number of practical activities in two of the analyzed courses, "International Trade" and "Public Relations and Protocol". However, such student opinions do not match up with the workload estimations performed in three b-learning courses, which evidence a proper adequacy to the common recommendations of 25 to 30 student working hours per ECTS credit.

Next, this chapter provided a longitudinal analysis of additional factors, related to the attitudes, levels of readiness, and perceived barriers by students taking part in b-learning courses, which may help to explain student acceptance or resistance to online learning and systems and methodologies. A significant group of students experienced problems in accessing to computers and the Internet at the usual place of study (including the college campus). Considering that using personal computers and the Internet are prerequisites for participation in e- and b-learning courses, access to Internet-enabling devices and the Web itself should be granted to all students.

Student opinions of needed dedication and effort to pass online courses (b-learning courses in this case) seem to be improving, according to data from the academic years 2006/2007 and 2007/2008. A trend toward more positive views of online learning is evident in certain student comments, pointing to "higher student involvement", and "easier and more frequent 'student-to-student' and 'student-to-lecturer' interactions" in online courses. Based on students' responses, the relative difficulty and learning acquired in b-Learning courses seems to be comparable to that of traditional presence-based ones.

Nevertheless, there is still potential for improvement in students' readiness for e- and b-learning courses. The analysis of spontaneous comments and observations, provided by students of the b-learning courses "International Trade" and "Public Relations and Protocol", enabled the identification of additional relevant barriers and aspects for student learning in b- and e-learning courses:

- Need for continuous student work and participation in online courses.
- Students' desired periodic feedback on actual performance made in each course activity.
- Complaints about the structure and depth of contents delivered through the online learning platform.
- Traditional dependence of students' work on direct lecturer supervision.
- Requests for a higher share of presence-based classes in b-learning courses.
- General preference for traditional presence-based learning among certain students.

## 5. References

- Alba, J.; Lynch, J.; Weitz, B.; Janiszewski, C.; Lutz, R.; Sawyer, A. & Wood, S. (1997). Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces. *Journal of Marketing*. Vol. 61, No. 3, (July 1997) pp. 38-53, ISSN 1547-7185
- Bitner, M.J.; Brown, S.W. & Meuter, M.L. (2000). Technology Infusion in Service Encounters. *Journal of the Academy of Marketing Science*. Vol. 28, No. 1, (January 2000) pp. 138-149, ISSN 1552-7824
- Burton-Jones, A. & Gallivan, M.J. (2007). Toward a Deeper Understanding of System Usage in Organizations: A Multilevel Perspective. *MIS Quarterly*. Vol. 31, No. 4, (December 2007) pp. 657-679, ISSN 0276-7783
- European Commission (2003). Decision No 2318/2003/EC of the European Parliament and of the Council of 5 December 2003 Adopting a Multiannual Programme (2004 To 2006) for the Effective Integration of Information and Communication Technologies (ICT) in Education and Training Systems in Europe (elearning Programme). *Official Journal of the European Union*. Vol. 345, (5 December 2003) pp. 9-16
- Featherman, M.S. & Pavlou, P.A. (2003). Predicting e-Services Adoption: A Perceived Risk Facets Perspective. *International Journal of Human-Computer Studies*. Vol. 59, No. 4, (October 2003) pp. 451-474, ISSN 1071-5819
- Gefen, D. & Straub, D. (2003). Managing User Trust in B2C e-Services. *e-Service Journal*. Vol. 2, No. 2, (Winter 2003) pp. 7-24, ISSN 1528-8234
- González, J. & Wagenaar, R. (2005). *Tuning Educational Structures in Europe: Universities' Contribution to the Bologna Process*, Publicaciones de la Universidad de Deusto, ISBN 978-84-9830-132-8, Spain
- Hoffman, D.L. & Novak, T.P. (1996). Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations. *Journal of Marketing*. Vol. 60, No. 3, (July 1996) pp. 50-68, ISSN 1547-7185
- Lapointe, L. & Rivard, S. (2005). A Multilevel Model of Resistance to Information Technology Implementation. *MIS Quarterly*. Vol. 29, No. 3, (September 2005) pp. 461-491, ISSN 0276-7783
- Lavigne, R.d. (2003). *ECTS Credits and Methods of Credit Allocation*, <http://www.unican.es/NR/rdonlyres/7105C0EE-73E1-4865-8AD3-62F812337AB2/4785/Doc23.pdf>
- Ministerio de Educación, Cultura y Deporte (2003). *La Integración del Sistema Universitario Español en el Espacio Europeo de Enseñanza Superior*, <http://www.um.es/vic-convergencia/eees/documentos/ponencias/intedracion-eees.pdf>
- Packham, G; Jones, P.; Miller, C. & Thomas, B. (2004). E-Learning and Retention: Key Factors Influencing Student Withdrawal. *Education + Training*. Vol. 46, No. 6/7, pp. 335-342, ISSN 0040-0912
- Parasuraman, A. & Colby, C.L. (2001). *Techno-Ready Marketing: How and Why Your Customers Adopt Technology*, The Free Press, ISBN 978-0684864945, New York, NY
- Taylor, S. & Todd, P.A. (1995). Understanding Information Technology Usage: A Test of Competing Models. *Information Systems Research*. Vol. 6, No. 2, (June 1995) pp. 144-176, ISSN 1526-5536
- Tiffin, J. & Ragasingham, L. (1997). *En Busca de la Clase Virtual: La Educación en la Sociedad de la Información*, Paidós, ISBN 978-8449304026, Barcelona, Spain

- Venkatesh, V. (2000). Determinants of Perceived Ease of Use: Integrating Control, Intrinsic Motivation, and Emotion into the Technology Acceptance Model. *Information Systems Research*. Vol. 11, No. 4, (December 2000) pp. 342-365, ISSN 1526-5536
- Yarbrough, A.K. & Smith, T.B. (2007). Technology Acceptance among Physicians: A New Take on TAM. *Medical Care Research and Review*. Vol. 64, No. 6, (December 2007) pp. 650-672, ISSN 1552-6801

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From 3rd to 5th March 2008 the International Association of Technology, Education and Development organised its International Technology, Education and Development Conference in Valencia, Spain. Over a hundred papers were presented by participants from a great variety of countries. Summarising, this book provides a kaleidoscopic view of work that is done, all over the world in (higher) education, characterised by the key words 'Education' and 'Development'. I wish the reader an enlightening experience.

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