

Teaching use intention and self-perception of bLearning in higher education¹

Intención de uso y autopercepción docente del bLearning en educación superior

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Abstract

In recent years the training scenarios are undergoing major transformations, mostly caused by the arrival of information and communication technologies. One of these changes has been translated into the expression Blended Learning, a formative methodology that combines face-to-face and online teaching largely embraced by the education field. Although it is true that research in this model is very abundant, the study on the adoption and perception of Blended Learning by teachers seems to have been neglected. For this reason, a quantitative study is presented focused on researching university teacher's perception regarding this formative modality. A total of 982 teachers from 35 Spanish public universities responded to the Questionnaire on Combined Formative Modality. The results show that, although a high percentage of teachers say that they know how this modality works and the advantages it reports, the percentage of teachers that acknowledge not having integrated it into the courses they teach is high. On the

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other hand, although the training offered by universities is considered important for its implementation, the intention of use is positively correlated with the teacher's self-perception of the resources and knowledge at their disposal. In this sense, it is important to point out the need to recognize, by higher education institutions, both the training and the adaptive work of teachers in the implementation of the combined training strategy.

Key words: *bLearning*, Higher Education, teacher perception, intention of use, teacher training, incentives.

Resumen

En los últimos años los escenarios de formación están sufriendo grandes transformaciones, provocadas en gran medida por la llegada de las tecnologías de la información y la comunicación. Uno de estos cambios se ha visto traducido en la expresión *Blended Learning*, modalidad formativa que combina la enseñanza presencial y la *online* y de gran acogida en el ámbito educativo. Si bien es cierto que la investigación en esta modalidad de aprendizaje es abundante, el estudio sobre la adopción y percepción del *Blended Learning* por parte del profesorado parece haberse descuidado. Por este motivo, se presenta un estudio de corte cuantitativa centrado en investigar la percepción del docente universitario respecto de esta modalidad o estrategia formativa. Un total de 982 docentes de 35 universidades públicas españolas respondieron al Cuestionario sobre Modalidad Formativa Combinada. Los resultados muestran que, si bien un elevado porcentaje de docentes afirma conocer de qué trata esta modalidad educativa y las ventajas que reporta, es elevado el porcentaje de docentes que reconoce no estar integrándola en las materias que imparte. Por otro lado, aunque se considera importante la formación ofrecida por parte de las universidades de cara a su implementación, la intención de uso se correlaciona positivamente con la autopercepción docente sobre los recursos y conocimientos a su disposición. En este sentido, es importante señalar la necesidad de reconocer, por parte de las instituciones de educación superior, tanto la formación como el trabajo adaptativo de los docentes en la implementación de estrategias formativa de carácter combinado.

Palabras clave: *bLearning*, Educación Superior, percepción docente, intención de uso, formación docente, incentivos.

Background

There is no doubt whatsoever that 2020 will go down in history as the year of the COVID-19 pandemic; a virus that has led to the lockdown of millions of people all over the world, shaking our economic system to the very core, and undermining humanity's social nature. An unprecedented event that has also clearly been reflected within the field of education. In Spain's case, the quarantine has prompted the closure of schools and colleges (El País, 2020) and the hurried and compulsory shift from face-to-face teaching to online learning. In the specific case of higher education, the Ministry of Higher Education (Government of Spain, 2020) has issued a document that refers to a new "adapted presentiality" for the 2020/2021 academic year; in other words, it recommends combining face-to-face classes and remote learning whenever possible. Yet there is nothing new about this, as in recent decades technology has meant that learning scenarios have undergone major transformations (García del Dujo & Martín, 2019; Paredes-Labra & Freitas, 2020; Solé, 2020) through having to adapt to fresh ways of communicating, working and learning (Floridi, 2014; García, Muñoz, & Hernández, 2015; Mace, 2020). Precisely one of the options that will enable us to cope in the best possible manner with the coming academic year at Spanish universities involves Blended Learning (henceforth bLearning), as a type of education that adopts a flexible, balanced and holistic approach to the combination of presential (face-to-face) learning and virtual (online) education (Garrison & Vaughan, 2008; Martín-García, 2014; Martín-García, García del Dujo, & Muñoz, 2014), catering for, on the one hand, the restructuring of teaching practice by overcoming spatiotemporal barriers in the education process and, on the other, by providing new options for interaction and communication (Bartolomé 2004; Graham, Woodfield, & Harrison, 2013; Salinas, Benito, Pérez, & Gisbert, 2018). It involves a format that is advancing toward an educational scenario in which the boundary between online and offline is becoming increasingly blurred; this means that bLearning essentially merges presential with virtual, together with technology and pedagogy. Nevertheless, although the educational community is already familiar with the term bLearning, the complexity of face-to-face learning added to the ubiquity provided by the virtual environment have meant there is as-yet no consensus on the definition of this type of education, which explains the appearance of different proposals, definitions and formats

for the application of bLearning over the past ten years (Bartolomé, García, & Aguaded, 2018; Martín-García, Martínez, & Reyes, 2019; Smith & Hill, 2018).

Where most of the studies conducted so far do in fact coincide is on the advantages stemming from the use of this format at both institutional and instructive level, reporting an increase in flexibility, an improvement in academic performance, the development of personal autonomy and self-regulated learning, a higher degree of engagement, improved financial results, and a higher level of personal academic satisfaction, among others (Smith & Hill, 2018).

On the other hand, the use of this format has also faced serious hurdles, with a clear example being the lack of teaching expertise to properly implement it (Mirriahi, Alonzo, & Fox, 2015) or the reluctance to use digital technology (Johnson, Adams, & Cummins, 2012). In order to deal with the challenges today's society poses, there is a need for teaching staff capable of transitioning to new methodological formats and strategies that enable us to conflate pedagogy and technology. Although it is true to say that recent years have witnessed a growing interest in teacher training in this particular field (Bartolomé, et al., 2018), few studies have so far focused on exploring lecturers' intentions and perception regarding bLearning, as aspects of considerable importance when introducing changes in teaching methods, and upon which the research presented forthwith focuses.

Theoretical underpinnings

The large amount of literature and research published over the past decade testifies to the warm reception that bLearning has received in the field of education (Bartolomé et al., 2018; Duarte, Guzmán, & Yot, 2018; Means et al., 2010; Picciano, Dziuban, & Graham, 2014). The bulk of this scientific output has focused on theoretical-practical aspects, seeking to provide a common framework for implementing this format, with some of these contributions being made by Garrison and Vaughan (2008) and by Stein and Graham (2014). Other scholars have also focused on analysing and explaining the mechanisms that institutions have used to adopt bLearning (Porter & Graham, 2016).

Although this format has been applied and studied in different areas and levels in education, it should be stressed that most of the projects involved in the application of bLearning have been undertaken by universities (Bartolomé et al., 2018). There are several possible reasons for this: on the one hand, university students' maturity and greater capacity for self-regulation facilitate the implementation of these kinds of semi-presential practices, and on the other, there is the economic efficiency it provides for these institutions (Martín-García, 2014; Smith & Hill, 2018).

Most of these studies have hitherto focused on students rather than on teaching staff (Bartolomé et al., 2018; Boelens, Voet, & De Wever, 2018; Smith & Hill, 2018); what's more, those studies that have focused on teaching staff have adopted a somewhat technological perspective, and not a pedagogical viewpoint, as their purpose has been to explore and analyse lecturers' effective use of technology rather than the adoption of bLearning. This latter approach entails attending to factors that go beyond the handling of technological devices, considering the learning factor in all its dimensions, as noted by Martín-García et al. (2019).

Although research has already flagged the importance of considering lecturers' attitudes and experiences when embracing changes in education, in the case of bLearning this aspect seems to have been overlooked (Porter & Graham, 2016). Nevertheless, the studies conducted so far agree upon the need to hone lecturers' technological and pedagogical skills with institutional support when using this format (Garrison & Vaughan, 2013; Korr, Derwin, Greene, & Sokoloff, 2012). In view of this, it is no surprise that many scholars agree upon the need to examine the adoption of bLearning from a lecturer's perspective (Porter, Graham, Spring, & Welch, 2014).

The findings of studies conducted along these lines up until now contend that despite being a key factor, lecturers' lack of training and instruction in these kinds of methods seems to be one of the main obstacles for deciding to use them in their subjects (Duarte et al., 2018; King & Boyatt, 2014; Martín-García, 2014; Martín-García et al., 2019; Mozelius & Rydell, 2017; Sheffield, McSweeney, & Panych, 2015; Wanner & Palmer, 2015). Moreover, one of the problems that has scarcely been addressed, and which seems to influence the adoption of bLearning by teaching staff, refers to the lack of institutional support, meaning not only the existence of rules and regulations that govern the format's use and application, but also the lack of time set aside for training, together

with a shortage of incentives (Boelens, et al., 2018; González, 2012; Porter & Graham, 2016; Tay, 2016; Wanner & Palmer, 2015; Zhu, Valcke, & Schellens, 2010).

Finally, it is worth stressing that most of the studies published point to the importance of considering lecturers' perceptions of bLearning and ways of adopting it (see, Bartolomé et al., 2018; King & Boyatt, 2014; Martín-García et al., 2019; Sheffield et al., 2015).

Method

This research adopts a qualitative approach within a non-experimental design of an ex-post-facto nature, given that none of the study's variables has been modified or altered. In line with prior studies undertaken by the research group (Martín-García & Sánchez, 2013; Martín-García, García del Dujo, & Muñoz Rodríguez, 2014), the aim is delve further into the analysis of the relationship between the intention to use bLearning (dependent variable) and lecturers' perception of the training received, prior experience, feelings of contentment, and the advantages and disadvantages found (independent variables), bearing in mind a series of intervening variables such as professional category or years of teaching experience.

Sample

The cohort consists of all the lecturers at Spanish public universities. A priori, we know there are 50 public universities and that the total number of teaching and research staff for the 2018-2019 academic year in Spain (according to data provided by the Ministry of Education and Occupational Training) is 122,910. Given the voluntary nature of the lecturers' participation, the sampling technique involved a causal non-probabilistic or accessibility approach, with the participating sample finally consisting of a total of 982 lecturers from 35 Spanish public universities, specifically located in 15 regions or Autonomous Communities (which in descending order are as follows: 16.6% from Andalusia, 12.02% from Madrid, 11.81% from Castilla y León, 9.8% from Murcia, 7.84% from the Community of Valencia, 4.9% from Aragon, 4.8% from the Canary Islands,

3.8% from the Basque Country, 3.6 from Castilla La Mancha, 3.1% from Cantabria, 2.7% from Extremadura, 2.1% from Galicia, and 0.8% from Navarre and Asturias, respectively).

In terms of gender, the breakdown is very similar (51% male and 49% female), with Table 1 providing the figures for age, teaching experience, and professional category.

TABLE I. Characteristics of the participating sample

Age (in years)			Teaching Experience (in years)			Professional Category		
	f	%		f	%		f	%
25 and under	7	.7	5 or fewer	130	13.2	Professor with chair	99	10.1
26-34	87	8.9	6-10	149	15.2	Associate prof./Univ. college prof.	345	35.1
35-44	266	27.1	11-15	127	12.9	Lecturer/Univ. college lecturer	194	19.8
45-54	373	38	16-20	148	15.1	Assistant PhD/ Assistant	90	9.2
55-64	228	23.2	21-25	160	16.3	Associate/ Part-time lecturer	199	20.3
65 and over	21	2.1	26 and over	268	27.3	Others	55	5.6

Considering the different knowledge areas taught by the lecturers taking part, a proportional representation of the sample is obtained, with 15.9% of those surveyed teaching Art & Humanities, 15.3% Sciences, 15.7% Health Sciences, 13.4% Architecture and Engineering, and 39.7% Social Sciences and Law. As regards professional category and experience, the highest proportion of participants (35.2%) correspond to permanent staff in the category of Associate Professor or University College Professor, reporting more than 25 years' experience; a contractual situation that, in turn, corresponds to the reality of the hiring policy at Spanish universities.

Instrument

Application was made of a Spanish questionnaire on Blended Learning at Universities called *Cuestionario sobre Modalidad Formativa Combinada en las Universidades*, drawn up and previously validated by the research team (Martín-García & Sánchez, 2014; Martín-García, Martínez-Abad, & Reyes González, 2019). As a self-report measure, the instrument is divided into three blocks of content. A first block that addresses personal and academic data (11 items), a second block on expertise, beliefs and attitudes involving bLearning (60 items), and a third block on users' experience with it (29 items). The scoring consists mainly of a combination of Likert-type scales (of 5 or 7 points depending on the degree of agreement with each one of the statements) and dichotomous answers, which permits an in-depth study of the variables according to their characteristics (nominal or scale).

The data-gathering process involved the questionnaire's online administration, making access easier for the population under study and speeding up the process, as the study was undertaken nationwide. Specifically, the questionnaire was administered via the Google Drive platform.

Procedure

The data-gathering process was held between January and March 2018, with the referent being the institutional email addresses of the teaching staff at Spanish public universities. The email contained a letter of introduction outlining the research's social value and its ethical criteria (voluntary participation and confidential treatment of data, complying with the Regulations of Salamanca University's Bioethics Committee), as well as the procedures for their observance, including the link to the questionnaire and providing the option of receiving feedback or guidance via email from the research group.

Data analysis

The data were analysed using the SPSS (v.22) statistical package. Based on an initial descriptive analysis of the variables' characteristics, we have proceeded to study the relationship between them, supported by the

pertinent correlational studies, mainly using the Spearman correlation coefficient for measuring ordinal variables and the chi-squared statistic when the aim has been to study the relationship between categorical and nominal variables.

Results

Perception of the use of bLearning among university teaching staff

According to the data obtained (see Table II), most university teaching staff (60.4%) report some degree of disagreement when asked if they are unaware of the bLearning method, which therefore indicates that they are generally familiar with it; only 24.7% admit to knowing nothing about this methodology. In turn 37.3% say they are familiar with bLearning, but do not use it in their teaching.

A small percentage of participants (3.4%) state that they are trying to master the basics of bLearning, while a much higher percentage (41.4%) state that they are not receiving any instruction in the matter. In turn, an even higher percentage (55.7%) admit that they do not include bLearning in their teaching.

Around 52% of the lecturers say they feel comfortable combining the specific activities or tasks of face-to-face teaching with on-line activities, or vice versa. The data suggest (albeit with a degree of variability) that around 41.1% of the lecturers may use bLearning in different contexts, being capable of introducing innovations and applications.

The descriptive responses to the issue of whether they are interested in using this method suggest that they are not, as the highest percentage disagree with this statement (66.6% of the cohort).

TABLE II. Lecturers' perception of the use of bLearning

About bLearning	1		2		3		4		5		Total	
	f	%	F	%	f	%	f	%	f	%	f	%
1. I am not familiar with bLearning	377	38.4	216	22.0	146	14.9	13	13.5	110	11.2	982	100
2. I am familiar with bLearning, but I do not normally use it	258	26.3	188	19.1	168	17.1	248	25.3	120	12.2	982	100
3. I am currently trying to master the basics of bLearning	407	41.4	222	22.6	190	19.3	130	13.2	33	3.4	982	100
4. I am beginning to gradually introduce bLearning into my teaching	351	35.7	196	20.0	179	1.2	214	21.8	42	4.3	982	100
5. I feel comfortable combining the specific activities or tasks of face-to-face teaching with online activities	133	13.5	105	10.7	233	23.7	272	27.7	239	24.3	982	100
6. I know how to use bLearning in any context, being capable of introducing innovations and new applications	162	16.5	187	19.0	229	23.3	232	23.6	172	17.5	982	100
7. I have no interest is using bLearning	648	66.6	112	11.4	143	14.6	49	5.0	30	3.1	982	100

A study of the relationship between professional category and the variable on the use of bLearning (using the chi-squared statistic) reports results on the intention of mastering the basics of bLearning, finding that positions such as associate lecturers or those with temporary contracts are willing to learn, while those with settled positions (such as the category of professor) are the ones with the least intention (see Table III). Taking as our reference the chi-squared test, the results record a figure of 32.96 with a p value < 0.05 (p = 0,03), revealing a relationship of dependence between these two variables.

TABLE III. Relationship between mastering bLearning and professional category (cross-tabulation)

Professional category		I am currently trying to master the basics of bLearning					Total
		1	2	3	4	5	
Professor with chair	Count	44	29	10	14	2	99
	%	10.8%	13.1%	5.3%	10.8%	6.1%	10.1%
Associate prof./ Univ. college prof.	Count	157	71	70	37	10	345
	%	38.6%	32.0%	36.8%	28.5%	30.3%	35.1%
Lecturer/Univ. college lecturer	Count	87	47	36	19	5	194
	%	21.4%	21.2%	18.9%	14.6%	15.2%	19.8%
Assistant PhD/Assistant	Count	28	21	25	11	5	90
	%	6.9%	9.5%	13.2%	8.5%	15.2%	9.2%
Associate/Part-time lecturer	Count	69	45	37	40	8	199
	%	17.0%	20.3%	19.5%	30.8%	24.2%	20.3%
Others	Count	22	9	12	9	3	55
	%	5.4%	4.1%	6.3%	6.9%	9.1%	5.6%
	N	407	222	190	130	33	982

Advantages and disadvantages of bLearning

The lecturers were asked to rate the advantages and disadvantages of using bLearning if they planned to apply this method in the near future (next semester or academic year).

The lecturers perceive (see Table IV) that bLearning will basically help them to streamline their organisation and presentation of information and content, making subjects more interesting and engaging. In addition, they consider it will help to facilitate students' learning process, increasing their motivation and improving class planning; the lowest mean scores are recorded when rating whether bLearning adds to professional prestige, or when considering that it increases a lecturer's workload.

TABLE IV. Advantages and disadvantages of bLearning

Advantages and disadvantages of bLearning	n	\bar{x}	Sx
1. It would help me to improve my professional performance	982	3.19	1.110
2. It would help me to make my classes more interesting and engaging	982	3.62	1.084
3. It would help to improve or facilitate my students' learning process	982	3.62	1.029
4. It would improve my class planning	982	3.45	1.118
5. It would increase my students' motivation	982	3.46	1.068
6. I would give me more time to develop content	982	3.24	1.194
7. It would increase my workload, with nothing new or better	982	2.80	1.134
8. It would probably be better than using a single format	982	3.51	1.140
9. It would make my teaching more efficient	982	3.46	1.041
10. It would increase the efficiency of assessment processes	982	3.40	1.090
11. It would streamline the organisation and presentation of information and the content to be learnt	982	3.63	1.023
12. It would probably enhance my professional image	982	3.18	1.089
13. It would help to refresh my professional performance, putting me on a par with my peers in these matters	982	2.79	1.128
14. My peers that use bLearning enjoy greater prestige and exposure than those that do not	982	2.46	1.059
15. The use of one or other format at this university has no kind of social or professional significance	982	3.11	1.219

A study of the relationship between variables according to professional category and the self-perceived advantages or disadvantages (Tables V and VI) revealed significant relationships regarding the statement whereby they considered that the use of bLearning would help them to improve their professional performance ($\chi^2 = 34.491$, $p < 0.05 = .023$) or when considering that it would enhance their professional image ($\chi^2 = 33.23$, $p < 0.05 = .032$).

TABLE V. Study of the relationship between the perception of bLearning according to the improvement in professional performance and professional category (cross-tabulation)

Professional category		The use of bLearning would help me to improve my professional performance					Total
		1	2	3	4	5	
Professor with chair	Count	9	19	34	26	11	99
	%	9.4%	13.7%	10.4%	8.2%	10.9%	10.1%
Associate prof./ Univ, college prof.	Count	40	53	119	101	32	345
	%	41.7%	38.1%	36.4%	31.7%	31.7%	35.1%
Lecturer/Univ. college lecturer	Count	28	27	49	66	24	194
	%	29.2%	19.4%	15.0%	20.7%	23.8%	19.8%
Assistant PhD/ Assistant	Count	5	15	33	30	7	90
	%	5.2%	10.8%	10.1%	9.4%	6.9%	9.2%
Associate/Part-time lecturer	Count	10	20	66	81	22	199
	%	10.4%	14.4%	20.2%	25.4%	21.8%	20.3%
Others	Count	4	5	26	15	5	55
	%	4.2%	3.6%	8.0%	4.7%	5.0%	5.6%
	n	96	139	327	319	101	982

TABLE VI. Study of the relationship between the perception of bLearning according to the enhancement of professional image and professional category (cross-tabulation)

Professional category		The use of bLearning would probably enhance my professional image					Total
		1	2	3	4	5	
Professor with chair	Count	6	15	29	39	10	99
	%	7.4%	15.2%	13.6%	9.4%	5.8%	10.1%
Associate prof./ Univ. college prof.	Count	31	34	73	151	56	345
	%	38.3%	34.3%	34.1%	36.4%	32.4%	35.1%
Lecturer/Univ. college lecturer	Count	25	16	35	79	39	194
	%	30.9%	16.2%	16.4%	19.0%	22.5%	19.8%
Assistant PhD/ Assistant	Count	2	12	21	42	13	90
	%	2.5%	12.1%	9.8%	10.1%	7.5%	9.2%
Associate/Part-time lecturer	Count	16	19	40	84	40	199
	%	19.8%	19.2%	18.7%	20.2%	23.1%	20.3%
Others	Count	1	3	16	20	15	55
	%	1.2%	3.0%	7.5%	4.8%	8.7%	5.6%
	n	81	99	214	415	173	982

Evaluation of the short-term individual use of bLearning

The lecturers did not report any incompatibility when using bLearning, indicating that it is a matter of workload, time and predisposition. They also affirm that given their resources and expertise, they could use bLearning without any problems, saying they were not at all intimidated by using a computer or other IT systems. Nevertheless, they also indicate that it depends on the subjects, as it is not simple or easy to use this format with certain ones.

It is significant that the lowest rated item or aspect involves the question on the degree of agreement or disagreement with feeling awkward when using virtual devices.

TABLE VII. Short-term individual use of bLearning

Short-term individual use of bLearning	n	\bar{X}	Sx
1. It's difficult because I don't have enough expertise, information or skills in handling ICTs	982	2.16	1.179
2. It'll be complicated, because I don't have enough teaching knowledge on combining the two formats	982	2.30	1.145
3. It depends on the subjects. It is not or won't be easy in mine	982	3.03	1.153
4. I find it easy to use bLearning	982	3.29	1.078
5. I cannot imagine higher education without a high percentage of face-to-face teaching	982	2.81	1.174
6. It would be very difficult to implement because of the absence of a material infrastructure or resources at this university	982	2.34	1.127
7. bLearning is not compatible with the scenarios, tasks and activities involved in my subjects	982	2.18	1.070
8. It would not be easy to implement because of a lack of support from management at my university/college	982	2.33	1.161
9. I don't see any incompatibility, it's just a question of time, work and predisposition	982	3.63	1.095
10. I would be willing to use bLearning if someone taught me how to go about it	982	3.06	1.220
11. I'm not confident about virtual teaching, I feel as if I'm losing control of my students	982	1.81	1.028
12. I don't feel the need to use it, I feel comfortable and satisfied with the way I've been teaching and the results obtained	982	2.41	1.194
13. Given my resources and knowledge, I could easily introduce bLearning	982	3.55	1.106
14. I'm not at all put off by the use of computers or digital devices in the classroom	982	4.36	.915
15. I find the use of complex tasks and activities in virtual environments quite bewildering	982	1.82	1.025
16. I feel awkward about using computers and other digital devices in the classroom	982	1.57	.971

Lecturers' thoughts on the use of bLearning

Lecturers generally consider that the implementation of bLearning is or can be beneficial, as well as enjoyable and fun. They also stress, nonetheless, that in their opinion it is a cumbersome and laborious task and is not an essential requirement.

TABLE VIII. Lecturers' self-perceived feelings about the use of bLearning

Thoughts on the use of bLearning	n	\bar{x}	Sx
It is (or may be) pleasant	982	3.83	.917
It is (or may be) cumbersome, laborious	982	3.02	1.239
It is (or may be) awkward	982	2.23	1.053
It is (or may be) beneficial	982	4.05	.821
It is (or may be) essential	982	2.98	1.133
It is (or may be) fun	982	3.54	.998
It is (or may be) insecure	982	2.15	1.037

Intention to use bLearning

Lecturers declare a firm intention to use bLearning in the future, albeit less so in the short or medium terms.

TABLE IX. Intention to use bLearning

Intention to use bLearning	n	\bar{x}	Sx
I intend to use bLearning in my subjects next year	982	4.57	2.187
I intend to use bLearning as much as possible in the future	982	5.13	1.801

A correlational study between the intention to use bLearning in the future and the perception of its appeal and benefits, using the Spearman correlation coefficient, records significant results ($p > 0.01$), with values ranging between $\rho = 0.41$ and $\rho = 0.57$ (see Table X), finding a positive relationship between variables, which is higher when there is no specific intention to use bLearning in the next academic year.

TABLE X. Correlations between the intention to use bLearning and thoughts about it

	Intended use next year	Intended use in the future
Appeal	.412**	.509**
Benefits	.460**	.574**

** The correlation is significant at the 0.01 level (bilateral).

Training received and experience in bLearning at the university

A high percentage of lecturers (56.1%) report that public universities provide them with instruction in bLearning; nevertheless, 76% state that the use of bLearning is voluntary, while 40.4% declare that their universities consider the use of bLearning in their quality policies. By contrast, almost 40% indicate that their universities do not provide any incentives to encourage or acknowledge the work of lecturers that use new information technologies. There is a significantly high level of unawareness when the lecturers are asked whether their universities have rules and regulations on their use of bLearning (56%), whether it is considered in management and promotion policies (43.1%), even with a higher percentage than those that say they do in fact consider it a quality indicator in innovation policies (41.6%).

As regards instruction, a fairly similar percentage of lecturers report having received training from the university (41.1%) as those that have not (48.6%), with this figure being higher when the focus is on receiving instruction from a centre or organisation other than the university, with 71% reporting that they have not received any outside training.

TABLE XI. Training and experience in *bLearning*

Training and experience in bLearning	Yes		No		DK/NO		Total	
	f	%	f	%	f	%	f	%
Your university provides teaching staff with training in bLearning	551	56.1	120	12.2	311	31.7	982	100
The use of bLearning by lecturers at your university is voluntary	746	76.0	56	5.7	180	18.3	982	100
There are rules and regulation on bLearning at your university	190	19.3	242	24.6	550	56.0	982	100
Your university considers bLearning in its management policies and the promotion of teaching staff	233	23.7	326	33.02	423	43.1	982	100
The use of bLearning at your university is considered an indicator of the quality of innovation processes	397	40.4	176	17.9	409	41.6	982	100
Your university provides incentives for encouraging and recognising the work of teaching staff that use new information technologies	266	27.1	384	39.1	332	33.8	982	100

Your university's institutional plan for the introduction of virtual learning allows you to work with professionals from the private sector	90	9.2	287	29.2	605	61.6	982	100
Your university has agreements on instruction in bLearning that are privately funded	65	6.6	207	21.1	710	72.3	982	100
In your own specific case, you have received some form of instruction in bLearning provided by your university	404	41.1	477	48.6	101	10.3	982	100
In your own specific case, you have received some form of instruction in bLearning provided by other centres or organisations outside your university	159	16.2	697	71.0	126	12.8	982	100

A study of the relationship between intended use and other variables, such as the instruction received, resources, or the expertise lecturers think they have, does not show a significant relationship in aspects related to the training received, but instead intention correlates positively with a lecturer's self-perception of their resources and knowledge for implementing bLearning, finding a negative correlation with the incompatibility that lecturers report between bLearning and the scenarios, tasks and activities their subjects require (see Table XII).

TABLE XII. Correlations between intended use and other variables such as resources and task incompatibility

	Intended use next year	Intended use in the future
Resources	,491**	,459**
Incompatibility between bLearning and subject tasks	-,418**	-,401**

** The correlation is significant at the 0.01 level (bilateral).

On this occasion, the relationship between the necessary compatibility and resources is closer when the intended use focuses on the final year, which is also the case when we analyse the relationship between incentives that encourage and acknowledge the work of teaching staff using ICTs in their classrooms and their intended use in following year, whose results (Table XIII), based on the chi-squared test, record a value of 25.653, with p value < 0.05 ($p = 0.012$).

TABLE XII. Study of the relationship between intended use and the existence of incentives (cross-tabulation)

Existence of incentives	Intended use								
		1	2	3	4	5	6	7	Total
YES	Count	29	18	25	28	34	50	82	266
	%	21.2%	15.0%	38.5%	30.8%	26.6%	29.1%	30.5%	27.1%
NO	Count	58	58	21	41	41	66	99	384
	%	42.3%	48.3%	32.3%	45.1%	32.0%	38.4%	36.8%	39.1%
DK/NO	Count	50	44	19	22	53	56	88	332
	%	36.5%	36.7%	29.2%	24.2%	41.4%	32.6%	32.7%	33.8%
	n	137	120	65	91	128	172	269	982

Discussion

Our findings shed light on significant aspects that are consistent with prior studies conducted along similar lines. Specifically, there is ample knowledge about the type of bLearning referred to in this study; nevertheless, it is still not being extensively used at Spanish public universities. More than 60% of the sample report that they have no interest in using this type of educational format, especially so those lecturers that have a more secure contract and longer trajectory in higher education; those that do use it, however, say they feel comfortable and apply it in different contexts.

University teaching staff consider that bLearning may be a suitable strategy for streamlining the organisation of information and content and its presentation to students, increasing the appeal of subjects and improving student motivation. There is also a widespread belief that bLearning increases a lecturer's workload without adding anything new or any improvement. These findings coincide with prior studies both on bLearning and on eLearning that also single out lecturers' lack of time (González, 2012; Wanner & Palmer, 2015).

Accordingly, and considering issues of time, workload and predisposition, the lecturers are of the opinion that the implementation

of bLearning depends on the subjects or topics, with some actually affirming that the use of technology in the classroom makes them feel awkward, even today. In this vein, studies such as the one by Mozelius and Rydell (2017) coincide in highlighting that even lecturers that are highly motivated to learn and adapt to a new technique or tools see it as an endeavour that requires time and dedication. Therefore, in agreement with Wanner and Palmer (2015), a high percentage of lecturers are still undecided, and are potentially misinformed about the educational value these strategies have, moreover citing limitations and lack of technological support (González, 2012; Zhu, Valcke, & Schellens, 2019).

Our research interest has also focused both on exploring lecturers' intention to use bLearning in the short and medium terms and on verifying whether or not the instruction received is associated with a greater intention to do so. Accordingly, we found a potential intention for future use, albeit not imminently so, expressed mainly by teaching staff with little experience and currently on temporary contracts. We also found that more than half the sample reports receiving instruction in bLearning at their universities, which confirms that public universities are making an effort to recycle their teaching staff in this matter. Along these same lines, the study's results show that intended use correlates positively both with the lecturers' expertise for implementing bLearning and with the resources at their disposal and their self-perception in terms of self-esteem and satisfaction, with these findings also coinciding with studies such as the one by Wanner and Palmer (2015).

These latter aspects of self-perception and resources are likewise related to the dissatisfaction lecturers express over the fact universities do not take the use of bLearning into account, besides the effort they say it entails, either in quality policies or in the provision of incentives that encourage and acknowledge its use, which therefore depends on an individual or collective predisposition. These findings coincide with those reported by Zhu, Valcke, and Schellens (2010) and the studies by King and Boyatt (2014), which have already noted that lecturers' mindsets, their self-confidence and skills will influence their use of learning methods via technology, and those by Porter and Graham (2016) that link intended use to the availability of infrastructures and means together with technical and institutional support.

Conclusions

There are sundry conclusions to be drawn that testify to the value of this study's contribution and the application of its findings. On the one hand, universities can no longer ignore the fact that the implementation of teaching methods such as bLearning means adapting to technological innovation and the new scenarios in both society as a whole and in higher education in particular, as they enable us to merge virtual and face-to-face formats. Furthermore, they respond to the requirements of a society and a labour market that call for more realistic, hands-on and flexible education, catering for different settings, environments, timeframes, and even stakeholders. A clear example of how models related to bLearning are capable of facilitating and adapting teaching-learning processes to social demands is the firm commitment made by Spain's Ministry of Higher Education to implement teaching formats consistent with bLearning to deal with the health crisis that we are currently facing (Government of Spain, 2020). Higher education should therefore take onboard the views and opinions of teaching staff as the main drivers of change, continuing with its thorough analysis of our main strengths and those weaknesses that need to be remedied. A lot is to be said, therefore, for the new technology acceptance models (TAM; Venkatesh & Bala, 2008; Venkatesh & Davis, 2000), in which the teaching role has a significant impact on the way students perceive this type of education.

The use of ICTs in higher education helps to reinforce the interaction between lecturers and students (Duarte et al., 2018); moreover, those that have experienced the benefits of the use of ICTs in the classroom find them appealing, appreciate their benefits, and consider their application to be compatible with their subjects' requirements, being more inclined to use innovative teaching methods (Çardak & Selvi, 2016). Nonetheless, it should be noted that universities' educational innovation plans should acknowledge lecturers' efforts to adapt accordingly, considering incentives, providing training and technical resources and, as indicated by a high percentage of the sample involved in this study, adding value to teaching assessment processes.

It is therefore important to highlight the need for drafting institutional policies in several areas: agreeing upon a definition and plan for the implementation of teaching methods based on bLearning in different branches of knowledge and academic courses, as already reported in

prior studies by Porter et al. (2014). A training plan, not only in purely technical and instrumental terms, but also in the field of pedagogy, which stresses the benefits for lecturers and students alike, and which coincides with the studies by Martín-García et al. (2019) and Mozelius and Rydell (2017). Finally, a plan for acknowledging lecturers' endeavour in terms of educational innovation, a commitment to teaching and learning, and the far-reaching transformation of education, as already stressed by Garrison and Vaughan (2013).

To conclude, we should focus on some of the study's limitations, basically involving its national setting and public universities. Future research could focus on a comparison with other universities with more experience in the implementation of bLearning.

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