

University student profiles in the learning to learn competence and their relationship with academic achievement

Perfiles de estudiantes universitarios en la competencia aprender a aprender y su relación con el rendimiento académico

Bernardo GARGALLO-LÓPEZ, PhD. Professor. Universidad de Valencia (bernardo.gargallo@uv.es).

Gonzalo ALMERICH-CERVERÓ, PhD. Associate Professor. Universidad de Valencia (gonzalo.almerich@uv.es).

Fran-J. GARCÍA-GARCÍA, PhD. Associate Professor. Universidad de Valencia (francisco.javier.garcia-garcia@uv.es).

Inmaculada LÓPEZ-FRANCÉS, PhD. Associate Professor. Universidad de Valencia (inmaculada.lopez-frances@uv.es).

Piedad-M.^a SAHUQUILLO-MATEO, PhD. Associate Professor. Universidad de Valencia (piedad.sahuquillo@uv.es).

Abstract:

Learning to learn (LtL) is a key competence that the European Commission has identified for education systems (Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for life-long learning and Council Recommendation of 22 May 2018 on key competences for lifelong learning). It is usually assumed that students will already handle it well when they start university and that their use of it will improve during their university studies, but this assumption needs testing. The aim of this article is to establish the level of management of this

competence as well as possible profiles of how university students use it and their relationship to academic achievement. To this end, we worked with a sample of 1,234 students from three universities in Valencia (Spain) in different study years and study areas, applying the QELtLCUS questionnaire, which evaluates the competence. We performed descriptive analyses, cluster analysis, analyses of differences, and multiple linear regression analyses. The sample subjects displayed an acceptable level of management, albeit with low scores in some important dimensions of LtL. We found two groups with two management profiles: one

Date of reception of the original: 2022-04-09.

Date of approval: 2023-06-05.

This is the English version of an article originally printed in Spanish in issue 286 of the **Revista Española de Pedagogía**. For this reason, the abbreviation EV has been added to the page numbers. Please, cite this article as follows: Gargallo-López, B., Almerich-Cerveró, G., García-García, F. J., López-Francés, I., & Sahuquillo-Mateo, P. M.^a (2023). Perfiles de estudiantes universitarios en la competencia aprender a aprender y su relación con el rendimiento académico [University student profiles in the learning to learn competence and their relationship with academic achievement]. *Revista Española de Pedagogía*, 81 (286), 457-487. <https://doi.org/10.22550/REP81-3-2023-02>

<https://revistadepedagogia.org/>

ISSN: 0034-9461 (Print), 2174-0909 (Online)

with a high competence level and another with a lower competence level. The students in the first group had better scores than those in the second group, with statistically significant results. We also found differences that were not statistically significant by gender, with a higher level of competence in women, with those relating to year and study area being larger. We believe that this research provides relevant data that may be of interest to researchers. It also includes guidance to help teachers work on this competence in university studies.

Keywords: self-regulated learning, learning to learn competence, higher education, learning strategies, academic achievement.

Resumen:

Aprender a aprender (AaA) es una competencia clave propuesta por la Comisión Europea para los sistemas educativos (Recomendación del Parlamento Europeo y del Consejo, de 18 de diciembre de 2006, sobre las competencias clave para el aprendizaje permanente y Recomendación del Consejo, de 22 de mayo de 2018, relativa a las competencias clave para el aprendizaje permanente). Se suele pensar que los estudiantes, al incorporarse a la universidad, la manejan suficientemente y que su uso mejora durante sus estudios universitarios, pero hay que verificar este supuesto. El objetivo de este artículo es delimitar el nivel de ma-

nejo de la competencia, así como los posibles perfiles de uso de los estudiantes universitarios y su relación con el rendimiento académico. Para ello, utilizamos una muestra de 1234 estudiantes de tres universidades de Valencia (España), de diferentes cursos y áreas de estudios, y les aplicamos el cuestionario CECA-PEU, que evalúa la competencia. Realizamos análisis descriptivos, de clúster, de diferencias y de regresión lineal múltiple. Los sujetos de la muestra exhibieron un nivel aceptable de manejo, aunque con puntuaciones bajas en algunas dimensiones relevantes de AaA. Encontramos dos grupos con dos perfiles de manejo, uno de ellos con competencia alta y el otro con competencia más baja. El alumnado del primer grupo obtuvo mejores calificaciones que el del segundo y los resultados fueron estadísticamente significativos. Se encontraron también diferencias en función del género (con mayor nivel de competencia en las chicas) que no fueron significativas; más pronunciadas fueron, en cambio, las asociadas con curso y con área de estudio. Creemos que esta investigación aporta datos relevantes que pueden interesar a los investigadores. Asimismo, recoge pautas para ayudar a los profesores a trabajar la competencia en los estudios universitarios.

Descriptores: aprendizaje autorregulado, competencia aprender a aprender, educación superior, estrategias de aprendizaje, rendimiento académico.

1. Introduction

The concept of “learning to learn” (LtL) has progressively grown in importance in academic literature since the

1980s, but it is only recently that it has been interpreted as a key competence for lifelong learning in the twenty-first century (Recommendation of the European

Parliament and of the Council of 18 December 2006 on key competences for lifelong learning; Council Recommendation of 22 May 2018 on key competences for lifelong learning).

The theoretical basis of this competence principally draws on two lines of research: strategic learning (SL) (Weinstein, 1987) and self-regulated learning (SRL) (Pintrich, 2004; Zimmerman, 2000). Both emphasise students' active participation in the management of their own learning processes (Weinstein & Acee, 2018). The first line is based on cognitive theory (information processing theory) and the second on sociocognitive theory.

The literature since the 1980s on these two constructs commonly has used the term "learning to learn" to refer to both, something that is readily apparent in any bibliographic search.

Typically, both constructs (SL and SRL) include three components: cognitive, metacognitive, and affective-motivational (Boekaerts, 2006; Brandmo et al., 2020; Panadero, 2017; Pintrich, 2004; Weinstein et al., 2000; Zimmerman, 2000).

Indeed, the first classifications of learning strategies included cognitive components (associational and repetition strategies, strategies for preparing and organising information), metacognitive ones (planning, self-regulation, and self-evaluation strategies) and affective-motivational ones (controlling anxiety, attitudes, motivational as-

pects, self-concept, self-esteem, self-efficacy) (Beltrán, 1987; Weinstein, 1988; Weinstein & Mayer, 1985; Weinstein et al., 1988). The best-known models of self-regulated learning (which usually include a three-phase cycle comprising planning, execution, and self-reflection) also included cognitive, metacognitive, and affective-motivational components in these three phases.

These three dimensions were incorporated into the concept of LTL very early on: cognitive (skills related to processing information), metacognitive (conscience and management of one's own learning processes); and affective-motivational (motivation, attitudes, etc.). This is reflected in the study by Hoskins and Fredriksson (2008) and in the one by Caena and Stringher (2020), when the evolution and the foundations of the formulation of the competence are analysed.

It is true that both theories mentioned above (SL and SRL) emphasise the learner as an autonomous subject who faces his or her own learning in isolation from the others in a certain way. Social aspects have been somewhat peripheral in the theory of strategic learning and also in the theory that concerns itself with self-regulated learning (Meyer & Turner, 2002), even though the latter is based on sociocognitive theory and not exclusively on the cognitive theory of information processing, as in the case of the former. This is the situation in the self-regulated learning models of Zimmerman (1989, 2000), Pintrich (2000), and Boekaerts (1996) (three important authors on the

subject) which do not explicitly mention these aspects.

Indeed, Zimmerman, who is certainly the most cited author with regards to the theory of self-regulated learning, did not include context in his model of three cyclical phases (Zimmerman, 2000) other than a minor reference to specific strategies for structuring the surroundings. Nonetheless, in his triadic models, the influence of the context and of vicarious learning is fundamental to the ability to develop self-regulation skills (Zimmerman, 2013). Boekaerts and Niemivirta (2000) make similar arguments.

It should be noted that Bandura (1986) already emphasised the social aspects of learning in his theory, which is a crucial element in Vygotsky (1978), because learning and hominization occur in social contexts with others, in a continuous process of internalisation of higher skills, which are initially provided by significant subjects from the surroundings. In fact, Vygotsky (1978) and von Glasersfeld (1989) are notable figures in the literature on the social nature of self-regulated learning (Thoutenhoofd & Pirrie, 2015).

With all of these precedents, it is no surprise that in the last decade of the previous century and in the first decade of this one the door was opened to the definition and exploration of regulation models that included shared regulation (Hadwin et al., 2005; Järvelä et al., 2008; McCaslin & Hickey, 2001), emphasising

the development of self-regulatory skills developed in interactive and collaborative learning environments (Hadwin et al., 2017; Hadwin & Oshige, 2011; Järvelä & Hadwin, 2015).

Consequently, there has been an openness to the perspective of socially shared cognition, of a subject who learns with others and from others; so that today we can speak of “co-regulation”, referring to the influence of others on a student’s learning and specifically on the learning of self-regulatory skills.

With all of this, the social dimension of learning to learn has constantly gained in importance in the different models developed, as noted, among others, by Johnson and Johnson (2017), Panadero (2017), Stringher (2014), and Thoutenhoofd and Pirrie (2015).

Drawing on previous research, the European Union (EU) included LtL as a key competence for educational systems (Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning). In this original formulation, LtL as a competence is understood to include cognitive, affective, and metacognitive dimensions with a very brief mention of socio-relational aspects:

“Learning to learn” is the ability to pursue and persist in learning, to organise one’s own learning, including through effective management of time and information, both individually and in groups. [...] awareness of one’s learning process [...] identify-

ing available opportunities [...] overcome obstacles in order to learn successfully [...] gaining, processing and assimilating new knowledge and skills [...] use and apply knowledge and skills in a variety of contexts [...]. Motivation and confidence are crucial to an individual's competence. (p. 16)

In 2018, the European Council (EC) reformulated this, setting out the "Personal, Social and Learning to Learn Competence" (Council Recommendation of 22 May 2018 on key competences for lifelong learning), which places more importance on social aspects than in the earlier definition:

Personal, social and learning to learn competence is the ability to reflect upon oneself, effectively manage time and information, work with others in a constructive way, remain resilient and manage one's own learning and career. It includes the ability to cope with uncertainty and complexity, learn to learn, support one's physical and emotional well-being [...] empathize and manage conflict. (p. 5)

There is a significant overlap with the formulation of LtL from 2006, but there are important additions: empathy and conflict management, resilience and the ability to manage uncertainty and stress, critical thinking, emphasis on team work and negotiation, a positive attitude towards personal well-being, social, and physical well-being and also, with regards to lifelong learning, the importance of an attitude of collaboration, assertiveness, and integrity, as well as developing an attitude aimed at solving problems. As Caena (2019) and Sala et al. (2020) note, who carried out two

works for the implementation of LtL for the EC, this new key competence integrates the earlier LtL competence, incorporating significant elements of personal and social development.

Learning to learn has inspired the interest of researchers and numerous works have been published, some emphasising theoretical reflection, conceptualisation, and the elaboration of models and others the evaluation, but not so much the teaching of the competence. Among others, we should note the works by Caena (2019), Caena and Stringher (2020), Deakin (2007), Deakin et al. (2013), García-Bellido et al. (2012), Hautamäki et al. (2002), Hoskins and Fredriksson (2008), Jornet et al. (2012), Martín and Moreno (2007), Moreno and Martín (2014), Muñoz-San Roque et al. (2016), Pirrie and Thoutenhoofd (2013), Sala et al. (2020), Schulz and Stamov (2010), Stringher (2014), Thoutenhoofd and Pirrie (2015), Villardón-Gallego et al., (2013) and Yániz and Villardón-Gallego (2015).

This interest is justified by the importance of the subject, since acquiring this competence is fundamental for students' development and for them to function in a complex and changing society (Säfström, 2018), in which many current jobs will disappear and the new jobs that emerge will require new competences and skills (Caena, 2019). For the European Political Strategy Centre (2017), LtL is the most important skill of all, because it makes it possible to empower individuals to face challenges in this complex and ambiguous world

(Ehlers & Kellermann, 2019; González-Gascón, 2022; Trilling & Fadel, 2009), providing innovative solutions (OECD, 2018, 2019).

The EU's goal is for students who complete compulsory education to have sufficiently developed the LtL competence, and so it is necessary to work on integrating it into the educational system from early ages. Nonetheless, this is more a wish than a reality, and LtL is still a fundamental competence for university students (Malnes et al., 2012) who need to be more independent and competent in managing their own learning than younger students (Lluch & Portillo, 2018; Ramírez, 2017); the available data do not seem to confirm a sufficient command of the competence and these students also need training in LtL (Cameron & Rideout, 2020; Furtado & Machado, 2016; Morón-Monge & García-Carmona, 2022; Viejo & Ortega-Ruiz, 2018; Zhu & Schumacher, 2016).

A theoretical model on which the scientific community agrees is vital to incorporate LtL effectively in educational systems. In this context, starting from the European Union's formulation of the competence, there have been important works in Europe, such as that by Hautamäki et al. (2002), from the University of Helsinki, who defined this competence and established three components in various dimensions and subdimensions: context-related beliefs (societal frames and perceived support for learning and studying), self-related beliefs (learning motivation, control beliefs, self-evaluation, etc.), and learning

competences (learning domain, reasoning domain, management of learning, affective self-regulation). Their aim was to construct a framework for evaluation. A later study by Hoskins and Fredriksson (2008) is also relevant. This was based on the one by Hautamäki et al. and other previous ones. These researchers coordinated the work of the European Union's CRELL network (Centre of Educational Research for Lifelong Learning), sponsored by the EC, to try to agree on a theoretical model and an evaluation protocol. In this case, three dimensions were established: cognitive, metacognitive, and affective, with the goal of designing an instrument to evaluate the competence that would act as a framework for European countries. The results did not satisfy the researchers, who were from various teams from EU member states, who were unable to reach an agreement on a common European indicator. The topic, therefore, remained open. Stringher (2014), also a member of this network, carried out a broad meta-analysis in an attempt to provide an inclusive definition and model. She covers four dimensions: cognitive, metacognitive, affective, and social.

Starting from these works, our research team has developed a theoretical model, constructed from the study of the academic literature, that sets out to be inclusive and comprehensive, and which serves as a reference point for our current research work. It includes five dimensions (cognitive, metacognitive, affective-motivational, social-relational, and ethical) and various subdimensions. The substantiation, formulation, and validation

processes of the model can be consulted in Gargallo-López et al. (2020). The first three dimensions derive from the strategic and self-regulated learning construct, and the fourth from the sociocognitive focus, as explained above. The fifth is our own contribution, and is consistent with the EC's most recent formulation and with other research (Cortina, 2013; Grace et al., 2017; Kass & Faden, 2018). We believe that learners cannot be regarded as competent in LtL if the ethical components involved in learning, in their own personal process of learning, and in their own personal improvement and in that of others are neglected.

Given its importance, we believe that it is vital to establish whether university students manage LtL well and to analyse its impact on academic achievement¹, given that there are few studies available on the topic in higher education. To do so, we have collected data from the research project that is being carried out².

Although there are a number of studies on the influence of learning strategies and self-regulated learning on academic achievement in university students (Kosnin, 2007; Hye-Jung et al., 2017; Lucieer et al., 2015; Lugo et al., 2016; Ning & Downing, 2015; Pérez González et al., 2022; Treviños, 2016; Yip, 2019; Zimmerman & Schunk, 2012), we have not found studies that specifically analyse the relationship between LtL and academic achievement.

If, as we believe, not all university students are sufficiently competent in LtL

and its influence on academic achievement is clear, we will have more than strong enough arguments to include this competence in the curricula of university degrees.

Therefore, the general objective of this work is to determine university students' LtL competence profiles and the relationship of these profiles with academic achievement.

This general aim takes shape in more specific objectives such as: evaluating the level of management of the competence in the general sample; establishing competence management profiles; analysing possible differences between groups with different profiles according to a number of relevant variables such as gender, age, year, or area of study; specifying the influence on academic achievement of the different dimensions of the competence according to belonging to the group or groups with the highest and lowest command; and evaluating whether there is a difference in academic achievement between the groups established by the profiles of management of the competence.

2. Method and materials

2.1. Research design

We used a quantitative non-experimental descriptive correlational design (McMillan & Schumacher, 2010).

2.2. Participants

The sample comprised 1234 students from three universities in the city of

Valencia (Spain), two public ones: the Universidad de Valencia (UV, 32.09% of the sample) and the Universidad Politécnica de Valencia (UPV, 35.65%), and one private: the Universidad Católica de Valencia (UCV, 32.25%). The sample was selected using purposive non-probability sampling, with the criterion being to obtain a suffi-

ciently varied and representative sample from different large fields/areas of knowledge from the three universities (health sciences, engineering and architecture, and education).

Table 1 shows the characteristics of the sample.

TABLE 1. The sample's characteristics.

Gender	68.14% (843) females, 31.6% (391) males	
Age	mean = 20.7 years; σ = 3.91; range: 17-55 years	
	17-18: 97 (15.3%)	17-18: 131 (21.8%)
	19-22: 460 (72.3%)	19-22: 384 (63.9%)
	=> 23: 79 (12.4%)	=> 23: 86 (14.3%)
Study area	32.1 % (397) from health sciences, 32.3 % (399) from education, 35.6% (439) from engineering and architecture	
	1 st : 46.6% (576)	
	2 nd : 24.9% (308)	
Study year	3 rd : 18.8% (233)	
	4 th : 8.4% (104)	
	5 th : 1.3% (16)*	

*Medicine students, a degree with 6 study years.

2.3. Instruments

The QELtLCUS questionnaire was used (Gargallo-López et al., 2021), which the research team drew up and validated to evaluate the competence in question, based on the model mentioned above (Gargallo-López et al., 2020).

To evaluate academic achievement, we calculated the mean of the grades from the first term as these are the ones closest to when the questionnaire was administered.

The QELtLCUS questionnaire comprises 85 items answered on a five-item Likert-type response scale. These gather information from the five dimensions of the theoretical model, which, in turn, contain twenty-one first-level subdimensions and some second-level subdimensions, in accordance with the theoretical model. Table 2 shows these along with their reliability figures, which are adequate. In the subdimensions, the McDonald's ω is greater than .60, meaning that they are stable.

The content validity of the questionnaire was established through analysis and evaluation of the content of the items and of their groupings into dimensions and subdimensions by seven experts (Bandalos, 2018), considering their validity, intelligibility, absence of ambiguity, and location.

TABLE 2. Structure of the questionnaire and reliability data.

DIMENSIONS/ SCALES	FIRST-LEVEL SUBDIMEN- SIONS/SUBSCALES	SECOND-LEVEL SUBDIMENSIONS/SUBSCALES
1. COGNITIVE 33 items $\alpha = .91$ $\omega = .88$	1. Managing information effectively $\alpha = .87$ $\omega = .85$	1.1. Searching for and selecting information $\alpha = .71$; $\omega = .71$
		1.2. Attention in class. Note taking $\alpha = .70$; $\omega = .70$
		1.3. Establishing connections between what is learning and what is learned $\alpha = .63$; $\omega = .63$
		1.4. Preparing and organising information $\alpha = .66$; $\omega = .67$
		1.5. Comprehensive memorisation $\alpha = .70$; $\omega = .70$
		1.6. Information retrieval $\alpha = .63$; $\omega = .62$
		1.7. Organising information to retrieve it in exams and pieces of work $\alpha = .56$; $\omega = .56$
	2. Communication skills $\alpha = .90$ $\omega = .90$	2.1. Oral communication/expression skills $\alpha = .85$; $\omega = .86$
		2.2. Communicating in foreign languages $\alpha = .88$; $\omega = .88$
	3. Using ICT $\alpha = .75$ $\omega = .76$	
	4. Critical and creative thinking $\alpha = .77$ $\omega = .77$	
2. METACOGNI- TIVE 12 items $\alpha = .90$ $\omega = .85$	5. Knowledge of objectives, evaluation criteria, and strategies $\alpha = .72$ $\omega = .72$	
	6. Planning, organising, and managing time $\alpha = .72$ $\omega = .73$	
	7. Self-evaluation, control, self-regulation $\alpha = .64$ $\omega = .64$	
	8. Solving problems $\alpha = .66$ $\omega = .67$	

3. AFFECTIVE AND MOTIVATIONAL	9. Intrinsic motivation $\alpha = .72$ $\omega = .72$	
	10. Tolerating frustration. Resilience $\alpha = .63$ $\omega = .63$	
	11. Internal attributions $\alpha = .62$ $\omega = .63$	
	12. Self-concept, self-esteem, self-efficacy $\alpha = .73$ $\omega = .74$	
	13. Physical and emotional well-being $\alpha = .77$ $\omega = .77$	
16 items	14. Anxiety $\alpha = .73$ $\omega = .73$	
$\alpha = .86$ $\omega = .87$		
4. SOCIAL/ RELATIONAL	15. Social values $\alpha = .75$ $\omega = .74$	
	16. Attitudes of cooperation and solidarity. Interpersonal relationships $\alpha = .74$ $\omega = .74$	
	17. Teamwork $\alpha = .84$ $\omega = .84$	17.1. Working with and helping classmates $\alpha = .77$; $\omega = .77$
		17.2. Teamwork. Personal engagement $\alpha = .75$; $\omega = .75$
15 items	18. Controlling environmental conditions $\alpha = .70$ $\omega = .70$	
$\alpha = .90$ $\omega = .90$		
5. ETHICS	19. Social responsibility in learning $\alpha = .71$ $\omega = .71$	
	20. Values. Honesty and respect $\alpha = .78$ $\omega = .78$	
	21. Respecting ethical and deontological codes (ítems 83, 84 y 85) $\alpha = .71$ $\omega = .71$	
9 items		
$\alpha = .86$ $\omega = .86$		

The questionnaire's construct validation was checked through confirmatory factor analysis (CFA) (Gargallo-López et al., (2021) using the lavaan program (Rosseel 2012), as there was a theoretical model whose validity was to be tested and given that there was a clear idea of what items comprised each dimension and subdimension of the instrument (Lloret-Segura et al., 2014). The indicators of fit of the model at the level of each dimension are adequate, as is that of the questionnaire at a global level (see Figure 1 and Tables 3 and 4). Fur-

thermore, regarding the reliability of the dimensions and the global reliability of the questionnaire, values greater than .70 were obtained for all of the dimensions and globally, based on Cronbach's α and McDonald's ω (1999) (see Table 5), and so the internal consistency of the scale is appropriate. Therefore, the CFA of the questionnaire was satisfactory and supports the evidence for the validity of the internal structure of the questionnaire. For more detail of the results of the validation of the questionnaire, see Gargallo-López et al. (2021).

FIGURE 1. Model of the LtL construct. confirmatory factor analysis.

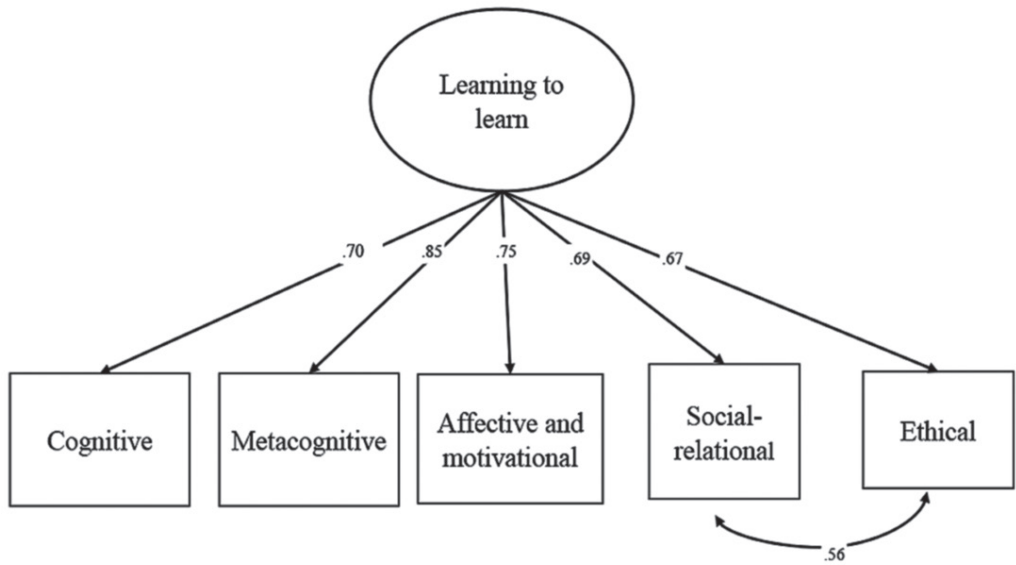


TABLE 3. Indicators of fit of the LtL construct.

χ^2 RMSEA							
χ^2	df	p	RMSEA	Int 90 %	Pclose	CFI	SRMR
2.659	4	.616	.000	(.000-.036)	.994	1.000	.021

TABLE 4. Indicators of fit of the LtL dimensions.

Dimensions or scales	χ^2			RMSEA				
	χ^2	df	p	RM-SEA	Int 90 %	Pclose	CFI	SRMR
Cognitive	1564.417	482	.000	.043	(.040-.045)	1.000	.954	.053
Metacognitive	63.122	50	.101	.015	(.000-.025)	1.000	.997	.030
Affective and motivational	288.564	98	.000	.040	(.034-.045)	.999	.966	.047
Social-relational	71.461	84	.833	.000	(.000-.010)	1.000	1.000	.032
Ethical	14.491	24	.935	.000	(.000-.006)	1.000	1.000	.023

TABLE 5. Global Cronbach’s α and MacDonald’s ω coefficients and Cronbach’s α and MacDonald’s ω coefficients of the dimensions of the questionnaire.

Dimensions	Coefficients
Global	$\alpha = .91$ $\omega = .88$
Cognitive	$\alpha = .91$ $\omega = .88$
Metacognitive	$\alpha = .90$ $\omega = .85$
Affective and motivational	$\alpha = .86$ $\omega = .87$
Social-relational	$\alpha = .90$ $\omega = .90$
Ethical	$\alpha = .86$ $\omega = .86$

2.4. Process

The data were collected online in the first trimester of the 2022–2023 academic year. The students responded in a single ordinary class session through an online application. The requirements of the Ethics Committee of the Universidad de Valencia were taken into account: the students were informed of the aims and process of the research, and participation was voluntary. Before answering, they gave informed consent and then completed the questionnaire, including demographic data, but no data that personally identified them, in order to respect their anonymity.

2.5. Data analysis

The data analysis includes descriptive statistics, cluster analysis, χ^2 test and the Mann-Whitney U test, using the SPSS 26.0 program.

The cluster analysis used the two-step method, which produces similar results to latent class analysis (Benassi et al., 2020).

The factor scores for each dimension and subdimension were calculated using the mean obtained for the items from each

one. This makes it possible to maintain the same metrics for the scale and make comparisons between dimensions and subdimensions (DiStefano et al., 2009). Each dimension and subdimension is unifactorial, and the loadings of the items generally do not differ (Abad et al., 2011).

3. Results

The results section comprises three parts. The first includes descriptive statistics for the LtL dimensions/subdimensions. In the second, the profile of the students depending on how they manage the competence, specifying the characteristics of the groups. The third relates academic achievement to group profiles.

3.1. Descriptive statistics of the LtL competence

As the aim is to evaluate the level of management of the competence of the students studied, it is appropriate to analyse the mean scores in the dimensions and subdimensions of the competence. Considering the sample as a whole, the students’ mean scores display a medium-high level (Table 6), with the high-

est in the social-relational and ethical dimension, followed by the affective-motivational, metacognitive, and cognitive ones, in which it is medium-high. The subdimensions with the highest scores are attitudes of cooperation and solidarity (4.48 out of 5); values, honesty, and respect (4.41); social values (4.32); and respect for ethical codes (4.31). The subdimensions with a lower level of competence are controlling anxiety (3.05), and planning (3.19). The value of the standard deviation indicates considerable homogeneity in the responses.

In the cognitive dimension, the Information management subdimension has the highest competence level with higher means in elaboration and organisation (4.00) and in making connections (3.93), and lower in organising for retrieval (3.74). In the other three subdimensions, there is adequate ICT management (3.81), and intermediate competence in critical and creative thinking (3.62) and in communication skills (3.55 and 3.52).

In the metacognitive dimension, the competence level is medium-high in three

subdimensions: self-evaluation (3.97), knowledge of objectives (3.95), and problem solving (3.92). In contrast, it is medium in planning (3.19).

In the affective-motivational dimension, the competence level is high in intrinsic motivation (4.19) and internal attributions (4.26), medium-high in self-concept and self-esteem (3.98), and physical and emotional well-being (3.83). In tolerating frustration, it is medium, and in controlling anxiety it is medium-low.

In the social-relational dimension, the competence level is high in all of the subdimensions, with the highest means in attitudes of cooperation and solidarity (4.48) and social values (4.32). The lowest mean was in controlling environmental conditions (4.07), although this score was still high.

In the ethical dimension, the competence level is high in the three subdimensions, with the highest level in values, honesty, and respect (4.41), and the lowest in social responsibility (4.06).

TABLE 6. Descriptive statistics of the LtL competence dimensions/subdimensions.

	Mean	SD	Asymmetry	Kurtosis	Kolmogorov-Smirnov normality test	
					Statistics test	Asyptotic significance
COGNITIVE	3.70	0.52	-0.286	0.378	0.022	.200
Information management	3.83	0.49	-0.569	1.068	0.036	.001
Data search and selection	3.77	0.69	-0.532	0.342	0.126	.000
Pay attention in class	3.78	0.89	-0.782	0.403	0.177	.000



Making connections	3.93	0.75	-0.674	0.624	0.178	.000
Elaboration and or- ganisation	4.00	0.85	-0.927	0.614	0.14	.000
Comprehensive memorisation	3.72	0.86	-0.634	0.107	0.121	.000
Data retrieval	3.86	0.75	-0.56	0.341	0.127	.000
Data retrieval organi- sation	3.74	0.75	-0.472	0.29	0.107	.000
Communication skills	3.54	0.78	-0.331	-0.405	0.049	.000
Oral Skills	3.55	0.87	-0.44	-0.106	0.117	.000
Communication in foreign languages	3.52	1.05	-0.467	-0.53	0.102	.000
ICT management	3.81	0.86	-0.643	0.016	0.129	.000
Critical and creative thinking	3.62	0.75	-0.335	-0.083	0.091	.000
METACOGNITIVE	3.76	0.54	-0.388	0.766	0.051	.000
Knowledge of objectives	3.95	0.75	-0.639	0.286	0.132	.000
Planing, organising	3.19	0.95	-0.272	-0.402	0.093	.000
Self-assessment, self-con- trol, self-regulation	3.97	0.66	-0.69	0.966	0.139	.000
Problem solving	3.92	0.64	-0.701	1.468	0.144	.000
AFFECTIVE- MOTIVACIONAL	3.82	0.49	-0.585	1.651	0.037	.001
Intrinsic motivation	4.19	0.72	-1.19	2.062	0.144	.000
Frustration tolerance	3.63	0.89	-0.511	0.148	0.143	.000
Internal attributions	4.26	0.72	-1.28	2.412	0.186	.000
Self-concept, self-steem, self-efficacy	3.98	0.66	-0.739	1.49	0.143	.000
Physical and emotional well-being	3.83	0.80	-0.661	0.323	0.139	.000

Controlling anxiety	3.05	1.06	0.035	-0.798	0.083	.000
SOCIAL-RELATIONAL	4.26	0.51	-1.622	6.492	0.074	.000
Social values	4.32	0.66	-1.348	3.183	0.152	.000
Cooperation and solidarity attitudes	4.48	0.58	-1.943	7.049	0.185	.000
Working and helping colleagues	4.15	0.72	-1.038	1.686	0.155	.000
Teamwork. Personal involvement	4.18	0.67	-1.03	2.223	0.133	.000
Controlling enviromental conditions	4.07	0.74	-0.943	1.29	0.158	.000
ETHICAL	4.26	0.53	-1.406	5.142	0.080	.000
Social responsibility	4.06	0.73	-0.859	1.168	0.129	.000
Values. Honesty and respect	4.41	0.63	-1.54	4.472	0.180	.000
Respect for ethical codes	4.31	0.61	-1.378	3.728	0.146	.000

3.2. Student profiles in LtL and their characteristics

We set out to establish competence management profiles to define the groups that emerged from them, with a view to determining possible differences between these groups in relevant variables and also in academic achievement. To obtain the profiles of the students in the learning to learn competence, a cluster analysis was performed using the two-step process. Given the non-normality of the variables and the skew and kurtosis indices (Table 6),

we opted for the maximum likelihood estimation method.

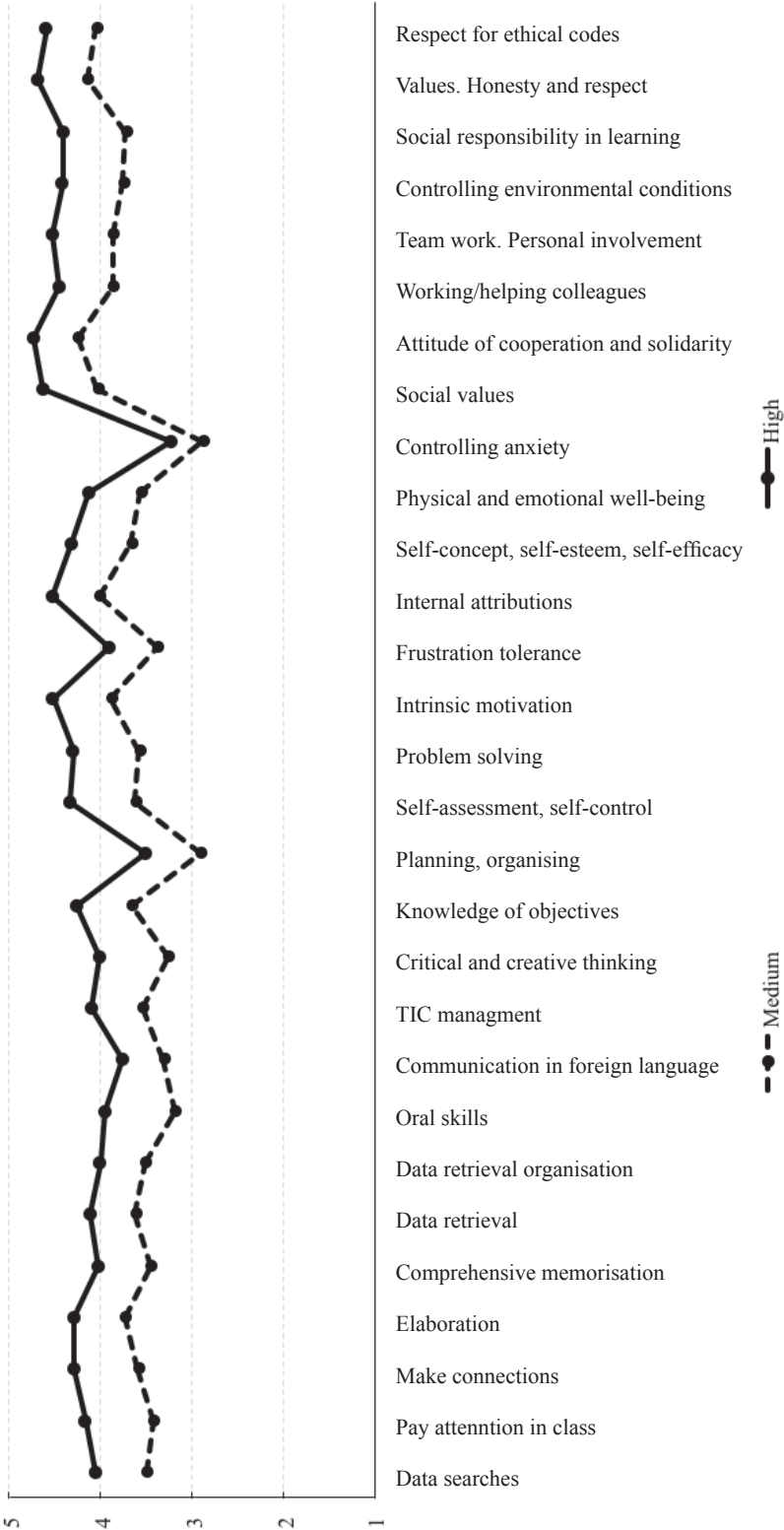
The optimal number of groups that the method estimates is 2, having tested options with 3 and 4 groups. The two-group cluster is most parsimonious as it is the clearest and has the most solid grouping. The two groups are of a similar size (Table 7), with a clear separation between the two (Figure 2), one with a high competence level and another with a lower average competence level.

TABLE 7. Groups of LtL competence.

Group	N	%
Average	634	51.4 %
High	600	48.6 %
Total	1234	



FIGURE 2. The group profiles in the LtL competence



The characteristics of both groups are as follows:

- Intermediate competence group. This is the larger (51.4% of the students) and displays an intermediate competence level. The pattern of the group is similar to the general pattern discussed above (Figure 2). In both the ethical dimension and the social-relational one, the level is medium-high, being lower in the other three dimensions (cognitive, metacognitive, and affective-motivational).

In the subdimensions, the maximum and minimum values follow the general pattern.

- High competence group. This is the smallest (48.6% of the students) and it has a high level. The pattern is similar to the general one (Figure 2). The ethical and social-relational dimensions have the highest means. The other three are lower but are still high. Similarly, the maximum and minimum values of the subdimensions are consistent with those of the general pattern.

TABLE 8. The groups' characteristics.

	Average group	High group
Gender	Males: 209 (33.2%)	Males: 182 (30.3%)
	Females: 425 (66.8%)	Females: 418 (69.7%)
Age	17-18: 97 (15.3%)	17-18: 131 (21.8%)
	19-22: 460 (72.3%)	19-22: 384 (63.9%)
	= > 23: 79 (12.4%)	= > 23: 86 (14.3%)
Study year	1 st : 250 (40.0%)	1 st : 326 (54.7%)
	Average age = 19.86	Average age = 20.21
	2 nd : 173 (27.7%)	2 nd : 135 (22.7%)
	Average age = 20.31	Average age = 19.99
	3 rd : 147 (23.5%)	3 rd : 86 (14.4%)
	Average age = 21.32	Average age = 22.01
	4 th : 55 (8.8%)	4 th : 49 (8.2%)
	Average age = 22.58	Average age = 24.27
Study area	Health sciences: 236 (37.1%)	Health sciences: 161 (26.8%)
	Engineering and architecture: 229 (36.0%)	Engineering and architecture: 229 (35.3%)
	Education: 171 (26.9%)	Education: 228 (37.9%)

Once the groups were established, it was necessary to identify their characteristics and analyse possible differences between them according to a range of relevant variables, as mentioned in the study objectives. To do so, we considered the personal and contextual variables of gender, age, year, and field of study. With regards to gender (Table 8), in the medium competence group, the percentage of males is higher than the percentage of females. The inverse is the case in the high competence group. Pearson's χ^2 (.987) is not statistically significant ($p = .321$), and so there is no association between gender and competence group.

In relation to age, in the medium competence group, the mean is 20.60, slightly below that of the high competence group, which has a mean of 20.78. As the assumption of normality is not fulfilled, we used the Mann-Whitney U test, and found statistically significant differences between the means of the two groups ($Z = -1.960$; $p = .050$). Consequently, the learning to learn competence increases as age increases.

With regards to the year, in the medium group the percentage of students in the second, third, and fourth years is greater than that of the high group, while in the high group, the percentage of students from the first year is greater than in the medium group. Pearson's χ^2 (32.318) is statistically significant ($p < .001$), meaning there is an association between the year and the competence group.

Nonetheless, it is necessary to bear in mind when analysing the sample that in the

first year there is a large group of students who are older than their fellow students, 17–18 years. Given the characteristics of the sample and the previous result for differences by age, we compared the age in the two LtL groups within each year group. As Table 8 shows, the mean age of the high competence group is higher than that of the medium competence group in each year, with the exception of the second year, although the Mann-Whitney U test did not show any statistically significant differences in any year between the two groups.

It appears then that the greater or lesser proportion of students in the higher competence group is also mediated by age and not just by their year.

Finally, considering the field of study, in the medium competence group, health science subjects are more numerous by percentage, followed by engineering and architecture and education, while in the high competence group, the field with the highest percentage is education, followed by engineering and architecture and health sciences. Pearson's χ^2 (21.994) is significant ($p < .001$), giving an association between the area of study and the competence group. Both groups differ in their composition, with a higher percentage of education and lower in health sciences in the high competence group and the inverse in the medium group.

3.3. LtL and academic achievement

Multiple regression analyses and analyses of differences between the two groups were performed to study the relationship between the command of the competence

and academic achievement, as stated in the study objectives.

3.3.1. Regression

To analyse the influence of the LtL dimensions on academic achievement according to whether the subjects were from the higher or lower competence group, we implemented a complete multiple regression model for each group, with the criterion being academic achievement and the predictors the five LtL dimensions.

The proposed regression model was significant in the medium group ($F_{5.563} = 3.740, p = .002$), with an explanation by the predictors

for academic achievement of 2.3% (adjusted $R^2 = .023$). It was also significant in the high group ($F_{5.563} = 9.183, p < .001$), with an explanation of 6.8% (adjusted $R^2 = .068$).

As for significant predictors that contribute to the explanation of the model (Table 9), only the metacognitive dimension was significant in the medium group. In the case of the high group, they were all significant except for the ethical dimension, with the cognitive dimension having the greatest contribution and the social-relational dimension the smallest. They were all positive, apart from the social-relational dimension, which was negative.

TABLE 9. Regression model.

Group		B	Error Dev.	Beta	t	Sig.
Overall	(Constant)	4.708	.303		15.561	.000
	Cognitive	.305	.079	.140	3.863	.000
	Metacognitive	.284	.086	.135	3.319	.001
	Affective-motivational	.241	.086	.103	2.800	.005
	Social-Relational	-.121	.101	-.054	-1.195	.232
	Ethical	-.041	.093	-.019	-.440	.660
Average	(Constant)	4.983	0.52		9.582	.000
	Cognitive	0.227	0.122	0.084	1.867	0.062
	Metacognitive	0.263	0.127	0.105	2.069	0.039
	Affective-motivational	0.128	0.125	0.05	1.026	0.305
	Social-relational	-0.004	0.14	-0.002	-0.03	0.976
	Ethical	-0.048	0.13	-0.022	-0.367	0.714
High	(Constant)	5.61	0.997		5.629	0
	Cognitive	0.397	0.134	0.136	2.971	0.003
	Metacognitive	0.336	0.137	0.116	2.453	0.014
	Affective-motivational	0.386	0.142	0.119	2.724	0.007
	Social-relational	-0.462	0.191	-0.111	-2.419	0.016
	Ethical	-0.152	0.165	-0.042	-0.924	0.356

3.3.2. Differences in achievement by competence group

The relationship obtained in the cluster analysis that explains students' academic achievement by the LtL management group to which they belong is presented here. To do so, we used the Mann-Whitney U test, as the assumption of normality is not fulfilled.

The high-competence group has a higher mean academic achievement (7.37) than the medium-competence group (6.92) (Table 10). Furthermore, according to the Mann-Whitney U test, the difference between both means is statistically significant, and has a small effect size (.040). Consequently, the better the learning to learn competence, the better the academic achievement obtained.

TABLE 10. Academic performance according to group.

Group	Mean	Standard deviation	t	Sig.	Partial eta squared
Average	6.92	1.10	-6.997	.<001	.040
High	7.37	1.12			

4. Discussion

Our aim in this work was to analyse the profiles of university students in LtL competence management and its potential relationship with academic achievement. We also set out to evaluate the level of management of the competence: considering for all of the sample that the mean scores for the dimensions and subdimensions of the competence reflected an acceptable level of competence. This was higher in the social-relational and ethical dimensions than in the others, in which the mean scores were also moderately high, with the sole exception of planning in the metacognitive dimension and controlling anxiety in the affective-motivational one.

Another objective of the work was to establish competence management profiles. Using cluster analysis, we found two

similar-sized groups of students with different levels of LtL competence management, one of them with a medium competence level and another with a high level. In the higher competence group, all of the mean scores for the subdimensions of the competence were greater than 4, with just three exceptions, which were greater than the mean of 3: planning, tolerating frustration, and controlling anxiety. In the lower competence group, the mean of the scores was above 3, with two exceptions below 3: planning and controlling anxiety.

We also set out to establish the influence of the different dimensions of the competence on academic achievement. The regression analysis showed that the metacognitive dimension was essential in relation to academic achievement, as it appeared in both groups.

Three more dimensions appeared in the high group that explained the achievement. The two most important dimensions were the cognitive and the affective-motivational. The other two contributed slightly less, albeit with higher scores than the medium group, with the social-relational being negative.

Therefore, in the high group, information management from critical and creative thinking is fundamental in the construction of knowledge, always from an internal attribution and intrinsic motivation (Figure 2). This group also possesses a high command of the social-relational competence, better than that of the intermediate group. Nonetheless, the negative relationship with academic achievement suggests that for the construction of knowledge, personal information management is fundamental even when supported by teamwork (Table 9).

Another objective was to assess whether there was a difference in academic achievement between the groups that manage the competence differently. It was found that the students from the group with the higher command of the competence obtained higher scores than those from the other group and the results were statistically significant. We have not found studies that specifically analyse the LtL competence and its relationship with academic achievement in university students, and so this is an important contribution by our work. There are studies that consider the relationship between learning strategies and

self-regulated learning (constructs that are connected to LtL) and achievement, and their influence has been verified. These include the works by Ergen and Kanadli (2017), Hye-Jung et al. (2017), Lucieer et al. (2016), Lugo et al. (2016), Ning and Downing (2015), Piovano et al. (2018), Sahranavard et al. (2018) and Yip (2019).

We also set out to analyse possible differences between the groups with differing levels of management of the competence depending on different relevant variables.

When analysing this relationship, we found that female subjects had a better command of the competence, albeit without statistically significant differences, in line with other studies (Ray & Garavalia, 2003; Virtanen & Nevgi, 2010). With regards to age, the scores were very similar, with the mean age of the subjects with more competence being higher, in this case with significant differences.

Contrary to expectations, the percentage of students from the second, third, and fourth years was higher in the medium competence group than in the high-level group and in the high-competence group, the percentage of first-year students was higher than in the medium-competence group. In this case, the differences were statistically significant, and there is an association between year and level of competence, with a higher percentage of year-1 students in the high competence group

than in the other years. This is striking because there are studies that confirm that students start university insufficiently prepared for LtL (Cameron & Rideout, 2020; Furtado Rosa & Machado Tinoco, 2016; Viejo & Ortega-Ruiz, 2018; Zhu & Schumacher, 2016) and it is assumed that they will learn to learn at university. Further research with larger samples would be necessary to see whether these results are confirmed. If this were the case, it would be necessary to reflect in-depth on the reasons why the level of LtL competence does not increase in higher years as would be expected as students progress through their university training.

In any case, we have already seen in the analyses that being in the higher competence group also depended on age, given that in all cases the high competence group in each year was older than the medium competence group.

Moreover, although we have not found works that study evolution of the LtL competence through the years of the degrees, there are some studies that are close in subject matter. Lynch (2006) analysed the relationship between various learning strategies and academic level, depending on year in the degree programme, finding that students in higher years did better in effort and self-efficacy while those from the first year were associated more with extrinsic motivation. Gargallo-López et al. (2012) studied the evolution of learning strategies during the first year of university in excellent and intermediate students. They found

that the excellent students had better mean scores than the overall means for metacognitive, affective, and information processing strategies and that both groups increased their extrinsic motivation, their anxiety, and their external attributions and they placed less value on the tasks, at the end of this year. Higgins et al. (2021) studied the changes that occurred in self-regulated learning in a sample of Australian students over three years and they found that, in the first year, from the first to the second semester, the self-efficacy, sense of value and academic competence scores, learning strategies (which included searching, preparing, organising, critical thinking, and self-regulation) time management and place of study all worsened. Nonetheless, in the second semester of the third year, the self-efficacy and learning strategies scores improved, although not the other two, which had reduced since the first measurement, taken in the first term of the first year.

Although the measurement instruments are not the same and neither is the type of study, as the first one is transversal like ours while the other two are longitudinal, it is true that we observed that no improvement occurs in them in any of the scores relating to learning strategies and self-regulated learning, as the students' progress move through the years, given that in some cases there are advances and in others reversals.

So, studies are needed that consider in more depth what we have found in the present work, and it would be appropriate

to do so, because there are important questions that merit an answer.

With regards to field of study, a greater percentage of students from educational sciences were in the high competence group, followed by those from engineering and architecture and those from health sciences, and a greater percentage of this last group is in the medium competence group. In this case, the differences are also statistically significant, with an association between the study area and competence group. These results are also peculiar, because the students who access the health science specialities (medicine, nursing and physiotherapy), at the Universidad de Valencia, from which the sample from this area of study is taken, need very high grades to enter these programmes, and further study is needed on why their achievement in LtL is apparently lower than that of other areas that do not have such high entry requirements.

5. Conclusions, limitations of the study, and future research

The results of this work prove the influence of command of the LtL competence on academic achievement, and so it is possible to assume that an increase in this competence could improve academic performance. This possibility leads us to suggest that university teachers should work on this competence in their modules to foster its improvement in their students. Although the sample includes one group of students with a relatively high level of management of the compe-

tence, it is true that the other group has a lower level. And there are subdimensions of the competence that it is necessary to work on, because of their importance and because the scores in them are relatively low: this is the case of planning, organisation, and time management (it is important to bear in mind, with the data from the study, that metacognitive strategies, which include planning, are the clearest predictor of achievement, as they fulfil this role in both groups), also the case of critical and creative thinking, oral communication skills, attention in class, comprehensive memorisation, and communication in foreign languages, tolerating frustration, and controlling anxiety.

Teachers' commitment would be needed to implement curriculum designs that integrate the components of competence into the teaching of the subjects, along with the other content taught in them, specifying these (teamwork, planning, critical thinking, information management, etc.) in learning outcomes and including teaching and evaluation procedures. We believe that this is the best option, contrasting with the application of specific training programmes for learning strategies and self-regulation in short periods, of which we have examples in the literature (Hernández et al., 2010; Hofer & Yu, 2009; Norton & Crowley, 1995; Ryder et al., 2017; Wibrowski et al., 2017; Yan et al., 2020). Although this would be an acceptable option, it is by integrating the teaching and evaluation of LtL in the subjects that the teachers deliver that an effective improvement

in the competence can be achieved by working on their components in context, thus favouring their use and transfer.

To achieve this and tackle these tasks, it is vital to train university teachers. Developing educational innovation projects and implementing courses and workshops on the LtL competence and on its teaching and evaluation appear to be necessary initiatives for making them widespread in the organisation.

Finally, we should note some limitations of this work. The main one is that the sample is not representative of the university population, as the data were collected from degrees in several areas of study at three universities in the city of Valencia, and it would be advisable to compare our results with those from samples that are representative. It is true that the sample is broad and, although it is not representative, it is sufficiently representative of these study areas.

Furthermore, the data were collected using a self-report questionnaire, in which the students comment on the basis of their perception, interpretation, and evaluation of the statements of the items in the instrument, which does not always reflect whether what the students say they do is what they really do when they learn. However, it is true that this limitation is shared by all of the many studies that use this type of instrument, as using them is the most practical way of collecting data from broad samples.

Despite all of this, we believe that our study provides data on an important subject that has been little studied, and it raises new questions that should be considered in subsequent works.

An approach to the subject that features a multi-methodological design that integrates quantitative methodology, (with information collected through the questionnaire used in this study) and a qualitative methodology (using phenomenographic-type methods [interview, observation, discussion groups] and authentic evaluation approaches in order to analyse use of the LtL competence when doing real tasks [portfolios, essays, groups work, and the outcomes resulting from it, etc.]) is a challenge that this team hopes to tackle, while also encouraging others to do likewise.

Notes

¹ Although the term academic achievement is multidimensional and has been interpreted in various ways, it is usually understood as the product of learning, the level of knowledge someone can demonstrate in a given field compared with the norm for the age and the academic level in question (Grasso, 2020). In the literature, the most frequent use is the average grade that each student obtains in a given academic period, which is an operational and functional way of describing the results (Tejedor, 1988) and this is how we define the term in this study.

² This is the “La competencia aprender a aprender en la universidad, su diseño y desarrollo curricular. Un modelo de intervención y su aplicación en los grados universitarios” project [The learning to learn competence in the university, its design and curriculum development: a model for intervention and its application in university degrees] (PID2021-123523NB-I00), funded by MCIN/AEI /10.13039/501100011033 and by the European Regional Development Fund (ERDF).

References

- Abad, F., Olea, J., Ponsoda, J. V., & García, C. (2011). *Medición en ciencias sociales y de la salud [Measuring in social and health sciences]*. Síntesis.
- Bandalos, D. L. (2018). *Measurement theory and applications for the social sciences*. The Guilford Press.
- Bandura, A. (1986). *Social foundations of thought and action: a social cognitive theory*. Prentice-Hall.
- Beltrán, J. (1993). *Procesos, estrategias y técnicas de aprendizaje [Learning procedures, strategies and techniques]*. Síntesis.
- Benassi, M., Garofalo, S., Ambrosini, V., Sant'Angelo, R. P., Raggini, R., De Paoli, G., Ravani, C., Giovagnoli, V., Orsoni, M., & Piraccini, G. (2020). Using two-step cluster analysis and latent class cluster analysis to classify the cognitive heterogeneity of cross-diagnostic psychiatric inpatients. *Frontiers in Psychology*, 11, 1-11. <https://doi.org/10.3389/fpsyg.2020.01085>
- Boekaerts, M. (1996). Self-regulated learning at the junction of cognition and motivation. *European Psychologist*, 1 (2), 100-112. <https://doi.org/10.1027/1016-9040.1.2.100>
- Boekaerts, M. (2006). Self-regulation and effort investment. In E. Sigel, & K. A. Renninger (Eds.), *Handbook of child psychology. Volume four: Child psychology in practice* (pp. 345-377). John Wiley & Sons.
- Boekaerts, M., & Niemivirta, M. (2000). Self-regulated learning: Finding a balance between learning goals and ego-protective goals. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 417-451). Academic Press. <https://doi.org/10.1016/b978-012109890-2/50042-1>
- Brandmo, C., Panadero, E., & Hopfenbeck, T. (2020). Bridging classroom assessment and self-regulated learning. *Assessment in Education*, 27 (4), 319-331. <https://doi.org/10.1080/0969594X.2020.1803589>
- Caena, F. (2019). *Developing a European framework for the personal, social & learning to learn key competence (LifEComp). Literature review & analysis of frameworks*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/172528>
- Caena, F., & Stringher, C. (2020). Towards a new conceptualization of learning to learn. *Aula Abierta*, 49 (3), 207-216. <https://doi.org/10.17811/rifie.49.3.2020.199-216>
- Cameron, R. B., & Rideout, C. A. (2020). «It's been a challenge finding new ways to learn»: First-year students' perceptions of adapting to learning in a university environment. *Studies in Higher Education*, 42 (11), 668-682. <https://doi.org/10.1080/03075079.2020.1783525>
- Cortina, A. (2013). *¿Para qué sirve realmente la ética? [What is ethics useful for?]*. Paidós.
- Council Recommendation of 22 May 2018 on key competences for lifelong learning. *Official Journal of the European Union*, C 189/1, of 4 June 2018. [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01))
- Deakin, R. (2007). Learning how to learn: The dynamic assessment of learning power. *The Curriculum Journal*, 18 (2), 135-153. <https://doi.org/10.1080/09585170701445947>
- Deakin, R., Haigney, D., Huang, S., Coburn, T., & Goldspink, Ch. (2013). Learning power in the workplace: The effective lifelong learning inventory and its reliability and validity and implications. *The International Journal of Human Resource Management*, 24 (11), 2255-2272. <https://doi.org/10.1080/09585192.2012.725075>
- DiStefano, C., Zhu, M., & Mindrila, D. (2009). Understanding and using factor scores: Considerations for the applied researcher. *Practical Assessment, Research, and Evaluation*, 14 (20). <https://doi.org/10.7275/da8t-4g52>
- Ehlers, U. D., & Kellermann, S. A. (2019). *The future skills report. International Delphi survey on the next skills project*. Baden-Wuerttemberg Cooperative State University.
- Ergen, B., & Kanadli, S. (2017). The effect of self-regulated learning strategies on academic achievement: A meta-analysis study. *Eurasian Journal of Educational Research*, 17 (69), 55-74. <https://ejer.com.tr/the-effect-of-self-regulated-learning-strategies-on-academic-achievement-a-meta-analysis-study/>
- European Political Strategy Centre. (2017). *10 trends transforming education as we know it. European Union*. <https://op.europa.eu/en/publication-detail/-/publication/227c6186-10d0-11ea-8c1f-01aa75ed71a1>

- Furtado, A., & Machado, A. M. (2016). Learning to learn the nursing consultation: Comprehensive analysis in the perspective of the student. *International Archives of Medicine*, 9 (388), 1-9. <https://doi.org/10.3823/2259>
- García-Bellido, R., Jornet, J., & González-Such, J. (2012). Una aproximación conceptual al diseño de instrumentos de evaluación de la competencia aprender a aprender en los profesionales de la educación [A conceptual approach for the design of instruments in education professionals for the evaluation of the competence learning to learn]. *Revista Iberoamericana de Evaluación Educativa*, 5 (1), 204-215. <https://revistas.uam.es/riece/article/view/4436>
- Gargallo-López, B., Almerich, G., Suárez-Rodríguez, J. M., & García-Félix, E. (2012). Estrategias de aprendizaje en estudiantes universitarios excelentes y medios. Su evolución a lo largo del primer año de carrera [Learning strategies in excellent and average university students. Their evolution over the first year of the career]. *Relieve*, 18 (2). <https://doi.org/10.7203/relieve.18.2.2000>
- Gargallo-López, B., Pérez-Pérez, C., García-García, F. J., Giménez, J. A., & Portillo, N. (2020). La competencia aprender a aprender en la universidad: propuesta de modelo teórico [The skill of learning to learn at university. Proposal for a theoretical model]. *Educación XX1*, 23 (1), 19-44. <https://doi.org/10.5944/educXX1.23367>
- Gargallo-López, B., Suárez-Rodríguez, J. M., Pérez-Pérez, C., Almerich, G., & García-García, F. J. (2021). El cuestionario CECAPEU. Un instrumento para evaluar la competencia aprender a aprender en estudiantes universitarios [The QELtLCUS questionnaire. An instrument for evaluating the learning to learn competence in university students]. *Relieve*, 27 (1). <https://doi.org/10.30827/relieve.v27i1.20760>
- González-Gascón, E. (2022). Learning to learn at the university. A marketing experience using the TAM. *Technology Science and Society Review*, 12 (3), 1-10. <https://doi.org/10.37467/revtechno.v11.4416>
- Grace, S., Innes, E., Patton, N., & Stockhausen, L. (2017). Ethical experiential learning in medical, nursing and allied health education: a narrative review. *Nurse Education Today*, 51, 23-33. <https://doi.org/10.1016/j.nedt.2016.12.024>
- Grasso, P. (2020). Rendimiento académico: un recorrido conceptual que aproxima a una definición unificada para el ámbito superior [Academic performance: A conceptual journey that approximates a unified definition for the higher level]. *Revista de Educación*, 11 (20), 87-102.
- Hadwin, A. F., Järvelä, S., & Miller, M. (2017). Self-regulation, co-regulation and shared regulation in collaborative learning environments. In D. H. Schunk, & J. A. Greene (Eds.), *Handbook of self-regulation of learning and performance* (2nd ed.) (pp. 83-106). Routledge / Taylor & Francis Group.
- Hadwin, A. F., & Oshige, M. (2011). Self-regulation, coregulation, and socially shared regulation: Exploring perspectives of social in self-regulated learning theory. *Teachers College Record*, 113 (2), 240-264.
- Hadwin, A. F., Wozney, L., & Pontin, O. (2005). Scaffolding the appropriation of self-regulatory activity: A socio-cultural analysis of changes in teacher-student discourse about a graduate student portfolio. *Instructional Science*, 33 (5-6), 413-450. <https://doi.org/10.1007/s11251-005-1274-7>
- Hautamäki, J., Arinen, P., Niemivirta, M. J., Eronen, S., Hautamäki, A., Kupiainen, S., Lindblom, B., Pakaslahti, L., Rantanen, P., & Scheinin, P. (2002). *Assessing learning-to-learn: a framework*. Opetushallitus.
- Hernández, F., Sales, P. J., & Cuesta, J. D. (2010). Impacto de un programa de autorregulación del aprendizaje en estudiantes de grado [A self-regulated learning intervention programme: Impact on university students]. *Revista de Educación*, 353, 571-588.
- Higgins, N. L., Rathner, J. A., & Frankland, S. (2021). Development of self-regulated learning: a longitudinal study on academic performance in undergraduate science. *Research in Science & Technological Education*. <https://doi.org/10.1080/02635143.2021.1997978>

- Hofer, B. K., & Yu, S. L. (2009). Teaching self-regulated learning through a «learning to learn» course. *Teaching of Psychology*, 30 (1), 30-33. https://doi.org/10.1207/S15328023TOP3001_05
- Hoskins, B., & Fredriksson, U. (2008). *Learning to learn: What is it and can it be measured?* European Commission, Joint Research Centre, Institute for the Protection and Security of the Citizen y Centre for Research on Lifelong Learning (CRELL).
- Hye-Jung, L., Lee, J., Makara, K. A., Fishman, B. J., & Teasley, S. D. (2017). A cross-cultural comparison of college students' learning strategies for academic achievement between South Korea and the USA. *Studies in Higher Education*, 42 (1), 169-183. <https://doi.org/10.1080/03075079.2015.1045473>
- Järvelä, S., & Hadwin, A. F. (2015). Promoting and researching adaptive regulation: New frontiers for CSCL research. *Computers in Human Behavior*, 52, 559-561. <https://doi.org/10.1016/j.chb.2015.05.006>
- Järvelä, S., Järvenoja, H., & Veermans, M. (2008). Understanding dynamics of motivation in socially shared learning. *International Journal of Educational Research*, 47 (2), 122-135. <https://doi.org/10.1016/j.ijer.2007.11.012>
- Johnson, D. W., & Johnson, R. T. (2017, September 22-23). *Cooperative learning* [Plenary presentation]. I Congreso Internacional de Innovación Educativa, Zaragoza, España. https://2017.congresoinnovacion.educa.aragon.es/documents/48/David_Johnson.pdf
- Jornet, J. J., García-Bellido, R., & González-Such, J. (2012). Evaluar la competencia aprender a aprender: una propuesta metodológica [Assessing the competence learning to learn: a methodological proposal]. *Profesorado. Revista de Currículum y Formación del Profesorado*, 16 (1), 103-123. <http://hdl.handle.net/10481/23009>
- Kass, M., & Faden, R. R. (2018). Ethics and learning health care: The essentials roles of engagement, transparency, and accountability. *Learning Health Systems*, 2 (4), 1-3. <https://doi.org/10.1002/lrh2.10066>
- Kosnin, A. M. (2007). Self-regulated learning and academic achievement in Malaysian undergraduates. *International Educational Journal*, 8 (1), 221-228.
- Lloret-Segura, S., Ferreres-Traver, A., Hernández-Baeza, A., & Tomás-Marco, I. (2014). El análisis factorial exploratorio de los ítems: una guía práctica, revisada y actualizada [Exploratory item factor analysis: A practical guide revised and updated]. *Anales de Psicología*, 30 (3), 1151-1169. <https://doi.org/10.6018/analesps.30.3.199361>
- Lluch, L., & Portillo, M. C. (2018). La competencia de aprender a aprender en el marco de la educación superior [Learning to learn in higher education]. *Revista Iberoamericana de Educación*, 78 (2), 59-76. <https://doi.org/10.35362/rie7823183>
- Lucieer, S. M., Jonker, L., Visscher, C., Rikers, R. M., & Themmen, A. P. (2016). Self-regulated learning and academic performance in medical education. *Medical Teacher*, 38 (6), 585-593. <https://doi.org/10.3109/0142159X.2015.1073240>
- Lugo, C. S. J., Hernández, G. R., Escoto, M. del C., & Montijo, E. L. (2016). Relación de los estilos y estrategias de aprendizaje con el rendimiento académico en estudiantes universitarios [Relationship of styles and learning strategies with the academic performance in university students]. *Revista de Estilos de Aprendizaje*, 9 (17), 268-288. <https://doi.org/10.55777/rea.v9i17.1054>
- Lynch, D. J. (2006). Motivational factors, learning strategies and resource management as predictors of course grades. *College Students Journal*, 40 (2), 423-427.
- Malnes, M., Vuksanović, N., & Simola M. (coords.). (2012). *Bologna with student eyes 2012*. European Students' Union ESU. <https://esu-online.org/wp-content/uploads/2016/07/BWSE2012-online1.pdf>
- Martín, E., & Moreno, A. (2007). *Competencia para aprender a aprender [Learning to learn competence]*. Alianza Editorial.
- McCaslin, M., & Hickey, D. T. (2001). Self-regulated learning and academic achievement: A Vygotskian view. In B. J. Zimmerman, & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 227-252). Lawrence Erlbaum Associates.
- McDonald, R. P. (1999). *Test theory: A unified treatment*. Psychology Press.

- McMillan, J. H., & Schumacher, S. (2010). *Research in education: Evidence-based inquiry* (7th ed.). Pearson.
- Meyer, D. K., & Turner, J. C. (2002) Using instructional discourse analysis to study the scaffolding of student self-regulation. *Educational Psychologist*, 37 (1), 17-25. https://doi.org/10.1207/S15326985EP3701_3
- Moreno, A., & Martín, E. (2014). The Spanish approach to learning to learn. In R. Deakin, C. Stringer, & K. Ren (Eds.), *Learning to learn* (pp. 196-213). Routledge.
- Morón-Monge, H., & García-Carmona, A. (2022). Developing prospective primary teachers' learning-to-learn competence through experimental activities. *International Journal of Science Education*, 44 (12), 2015-2034. <https://doi.org/10.1080/09500693.2022.2108929>
- Muñoz-San Roque, I., Martín-Alonso, J. F., Prieto-Navarro, L., & Urosa-Sanz, B. (2016). Autopercepción del nivel de desarrollo de la competencia de aprender a aprender en el contexto universitario: propuesta de un instrumento de evaluación [Self-perceived level of development of learning to learn competence in the university context: A proposed measuring instrument]. *Revista de Investigación Educativa*, 34 (2), 369-383. <https://doi.org/10.6018/rie.34.2.235881>
- Ning, H. K., & Downing, K. (2015). A latent profile analysis of university students' self-regulated learning strategies. *Studies in Higher Education*, 40 (7), 1328-1346. <https://doi.org/10.1080/03075079.2014.880832>
- Norton, L. S., & Crowley, C. M. (1995). Can students be helped to learn? An evaluation of an approach to learning programme for first year degree students. *Higher Education*, 29, 307-328. <https://doi.org/10.1007/BF01384496>
- OECD. (2018). *PISA Global Competence Framework*. OECD. <https://www.oecd.org/pisa/Handbook-PISA-2018-Global-Competence.pdf>
- OECD. (2019). *OECD Future of Education and Skills 2030. Conceptual Learning Framework. Learning Compass 2030*. <https://bit.ly/3ksvYDK>
- Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology*, 8 (422), 1-28. <https://doi.org/10.3389/fpsyg.2017.00422>
- Pérez-González, J. C., Filella, G., Soldevila, A., Faiad, Y., & Sánchez-Ruiz, M. J. (2022). Integrating self-regulated learning and individual differences in the prediction of university academic achievement across a three-year-long degree. *Metacognition and Learning*, 17 (3), 1141-1165. <https://doi.org/10.1007/s11409-022-09315-w>
- Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 452-502). Academic Press. <https://doi.org/10.1016/B978-012109890-2/50043-3>
- Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, 16 (4), 385-407. <https://doi.org/10.1007/s10648-004-0006-x>
- Piovano, S., Roisen, E., Fischer, C., Rodriguez, G., & Victorero, B. (2018). Estrategias de aprendizaje que utilizan los estudiantes de 1.º año de los departamentos de psicología y ciencias pedagógicas, administración y ciencias sociales y sistemas de una universidad privada [Learning strategies used by 1st year students of the departments of psychology and pedagogical sciences, administration and social sciences and systems of a private university]. *RAES: Revista Argentina de Educación Superior*, 10 (17), 98-114.
- Pirrie, A., & Thoutenhoofd, E. D. (2013). Learning to learn in the European Reference Framework for lifelong learning. *Oxford Review of Education*, 39 (5), 609-626. <https://doi.org/10.1080/03054985.2013.840280>
- Ramírez, J. J. (2017). *La competencia «aprender a aprender» en un contexto educativo de ingeniería [«Learn to learn» competence in an engineering educational context]* [Doctoral thesis]. TDX (Tesis Doctorals en Xarxa). <http://hdl.handle.net/10803/456383>
- Ray, M. W., & Garavalia, L. S. (2003, 21-25 de abril). *Gender differences in self-regulated learning, task value, and achievement in developmental college students* [Conference paper]. Annual Meeting of the American Educational Research Association, Chicago, EE. UU.

- Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning]. *Official Journal of the European Union*, L 394/10, of 30 December 2006. <https://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:394:0010:0018:en:PDF>
- Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling. *Journal of statistical software*, 48 (2), 1-36. <https://doi.org/10.18637/jss.v048.i02>
- Ryder, G., Rusell, P., Burton, M. Quinn, P., & Daly, S. (2017). Embedding peer support as a core learning skill in higher education. *Journal of Information Literacy*, 11 (1), 184-302. <https://arrow.tudublin.ie/ittsupart/10/>
- Säfström, C. A. (2018). Liveable life, educational theory and the imperative of constant change. *European Educational Research Journal*, 17 (5), 621-630. <https://doi.org/10.1177/1474904118784480>
- Sahranavard, S., Niri, M. R., & Salehiniya, H. (2018). The relationship between self-regulation and educational performance in students. *Journal of Education and Health Promotion*, 7, 154. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6332646/pdf/JEHP-7-154.pdf>
- Sala, A., Punie, Y., Garkov, V., & Cabrera Giraldez, M. (2020). *LifeComp: The European framework for personal, social and learning to learn key competence*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/302967>
- Schulz, M., & Stamov, C. (2010). Informal workplace learning: An exploration of age differences in learning competence. *Learning and Instruction*, 20 (5), 383-399. <https://doi.org/10.1016/j.learninstruc.2009.03.003>
- Stringher, C. (2014). What is learning to learn? A learning to learn process and output model. In R. Deakin, C. Stringher, & K. Ren (Eds.), *Learning to learn* (pp. 9-32). Routledge.
- Tejedor, F. J. (Coord.). (1998). *Los alumnos de la Universidad de Salamanca. Características y rendimiento académico [Students from the Salamanca University. Characteristics and academic achievement]*. Ediciones Universidad de Salamanca.
- Thoutenhoofd, E. D., & Pirrie, A. (2015). From self-regulation to learning to learn: Observations on the construction of self and learning. *British Educational Research Journal*, 41 (1), 72-84. <https://doi.org/10.1002/berj.3128>
- Treviños, L. (2016). *Estrategias de aprendizaje y rendimiento académico en estudiantes universitarios de Huancayo [Learning strategies and academic performance in college students from Huancayo]* [Master thesis]. Repositorio de la Universidad Nacional del Centro del Perú. <http://hdl.handle.net/20.500.12894/4485>
- Trilling, B., & Fadel, C. (2009). *21st century skills. Learning for life in our times*. Jossey-Bass.
- Viejo, C., & Ortega-Ruiz, R. (2018). Competencias para la investigación: el trabajo de fin de Máster y su potencialidad formativa [Competence for research: The master's thesis and its scientific training potentiality]. *Revista de Innovación y Buenas Prácticas Docentes*, 5, 46-56. <http://hdl.handle.net/10396/16951>
- Villardón-Gallego, L., Yániz, C., Achurra, C., Iraurgi, I., & Aguilar, M. C. (2013). Learning competence in university: Development and structural validation of a scale to measure. *Psicodidáctica*, 18 (2), 357-374. <https://doi.org/10.1387/RevPsicodidact.6470>
- Virtanen, P., & Nevgi, A., (2010). Disciplinary and gender differences among higher education students in self-regulated learning strategies. *Educational Psychology*, 30 (3), 323-347.
- von Glasersfeld, E. (1989). Cognition, construction of knowledge, and teaching. *Synthese*, 80 (1), 121-140. <https://doi.org/10.1007/BF00869951>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Weinstein, C. E. (1987). *LASSI user's manual for those administering the learning and study strategies inventory*. H&H Publishing Company.
- Weinstein, C. E. (1988). Assessment and training of student learning strategies. In R. R. Schmeck (Ed.), *Learning strategies and learning styles* (pp. 291-316). Plenum Press.
- Weinstein, C. E., & Acee, T. W. (2018). Study and learning strategies. In R. F. Flippo, & T. W. Bean (Eds.), *Handbook of college reading and study strategy research* (pp. 227-240). Routledge.

- Weinstein, C. E., Husman, J., & Dierking, D. (2000). Self-regulation interventions with a focus on learning strategies. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 727-747). Academic Press. <https://doi.org/10.1016/B978-012109890-2/50051-2>
- Weinstein, C. E., & Mayer, R. E. (1985). The teaching of learning strategies. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (pp. 315-327). MacMillan.
- Weinstein, C. E., Zimmerman, S. A., & Palmer, D. R. (1988). Assessing learning strategies: The design and development of the Lassi. In C. E. Weinstein, E. T. Goetz, & P. A. Alexander (Eds.), *Learning and study strategies* (pp. 25-40). Academic Press.
- Wibrowski, C. R., Matthews, W. K., & Kitsantas, A. (2017). The role of a skills learning support program on first-generation college students' self-regulation, motivation, and academic achievement: a longitudinal study. *Journal of College Student Retention: Research, Theory and Practice*, 19 (3), 317-332. <https://doi.org/10.1177/1521025116629152>
- Yan, Z., Chiu, M. M., & Ko, P. Y. (2020). Effects of self-assessment diaries on academic achievement, self-regulation, and motivation. *Assessment in Education: Principles, Policy and Practice*, 27 (5), 562-583. <https://doi.org/10.1080/0969594X.2020.1827221>
- Yániz, C., & Villardón-Gallego, L. (2015). Competencia para aprender [Competence to learn]. In L. Villardón-Gallego (Coord.), *Competencias genéricas en educación superior [Generic competencies in higher education]* (pp. 25-53). Narcea.
- Yip, M. C. W. (2019). The linkage among academic performance, learning strategies and self-efficacy of Japanese university students: A mixed-method approach. *Studies in Higher Education*, 46 (8), 1565-1577. <https://doi.org/10.1080/03075079.2019.1695111>
- Zhu, J., & Schumacher, D. J. (2016). Learning to learn and teaching to learn. *MedEdPublish*, 5, 63. <https://doi.org/10.15694/mep.2016.000063>
- Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81 (3), 329-339. <https://doi.org/10.1037/0022-0663.81.3.329>
- Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-39). Academic Press. <https://doi.org/10.1016/B978-012109890-2/50031-7>
- Zimmerman, B. J. (2013). From cognitive modeling to self-regulation: A social cognitive career path. *Educational Psychology*, 48 (3), 135-147. <https://doi.org/10.1080/00461520.2013.794676>
- Zimmerman, B. J., & Schunk, D. H. (2012). *Self-regulated learning and academic achievement. Theory, research, and practice*. Springer-Verlag.

Authors' biographies

Bernardo Gargallo-López is a Professor of Theory of Education at the Universidad de Valencia. First National Prize for Educational Research in 2000 and 2002. His current line of research and the competitive projects he has directed centre on teaching and learning in the university setting. He runs the GIPU-EA group.

 <https://orcid.org/0000-0002-2805-4129>

Gonzalo Almerich-Cerveró is an Associate Professor in the Department of Educational Research Methods at the Universidad de Valencia. His research centres on the integration of information and communication technology (ICT) in education, 21st-century competences, the learning processes of students, educational measurement, and educational research methodology.

 <https://orcid.org/0000-0002-8952-4104>

Fran-J. García-García is an Associate Professor in the Department of Theory of Education, Universidad de Valencia.

He won the Special Master's Prize in Special Education. His most recent works cover online learning, university pedagogy, and higher-education students' learning.



<https://orcid.org/0000-0002-6267-0080>

Inmaculada López-Francés has a doctorate in education from the Universidad de Valencia and is an Associate Professor. Licentiate Degree and Doctoral prizes from the Universidad de Valencia. Her lines of research include sexual, affective,

identity, and gender diversity and university pedagogy.



<https://orcid.org/0000-0003-1178-9054>

Piedad-M.^a Sahuquillo-Mateo has a doctorate in Education from the Universidad de Valencia and is an Associate Professor of Theory of Education. Her research interests centre on the family and the minor and on university pedagogy.



<https://orcid.org/0000-0002-8450-2475>

Table of Contents

Sumario

Studies *Estudios*

Kristján Kristjánsson

Phronesis, meta-emotions, and character education
Phrónesis, metaemociones y educación del carácter 437

**Bernardo Gargallo-López, Gonzalo Almerich-Cerveró,
Fran J. García-García, Inmaculada López-Francés,
& Piedad-M.ª Sahuquillo-Mateo**

*University student profiles in the learning to learn
competence and their relationship with academic
achievement*
*Perfiles de estudiantes universitarios en la competencia
aprender a aprender y su relación con el rendimiento
académico* 457

**Gemma Fernández-Caminero, José-Luis Álvarez-
Castillo, Hugo González-González, & Luis Espino-Díaz**

*Teaching morality as an inclusive competence in
higher education: Effects of dilemma discussion and
contribution of empathy*
*Enseñando moralidad como competencia inclusiva en
educación superior: efectos de la discusión de dilemas y
contribución de la empatía* 489

Jaime Vilarroig-Martin

*Joaquín Xirau's pedagogy: Between tradition and
modernity*
*La pedagogía de Joaquín Xirau: entre la tradición y la
modernidad* 511

Notes *Notas*

Ana Romero-Iribas, & Celia Camilli-Trujillo

*Design and validation of a Character Friendship Scale
for young adults*
*Diseño y validación de una Escala de Amistad de Carácter para
jóvenes* 529

**Begoña García-Domingo, Jesús-M. Rodríguez-Mantilla,
& Angélica Martínez-Zarzuelo**

*An instrument to evaluate the impact of the higher
education accreditation system: Validation through
exploratory factor analysis*
*Instrumento para valorar el impacto del sistema de acreditación
en educación superior: validación mediante análisis factorial
exploratorio* 555

**Judit Ruiz-Lázaro, Coral González-Barbera, & José-Luis
Gaviria-Soto**

*The Spanish History test for university entry: Analysis
and comparison among autonomous regions*
*La prueba de Historia de España para acceder a la universidad:
análisis y comparación entre comunidades autónomas* 579

**Juan-F. Luesia, Juan-F. Plaza, Isabel Benítez, & Milagrosa
Sánchez-Martín**

*Development and validation of the Test of Spelling
Competence (TCORT) in incoming university students*
*Desarrollo y validación del Test de Competencia Ortográfica
(TCORT) en estudiantes universitarios de nuevo ingreso* 601

Book reviews

Abad, M. J. (Coord.) (2022). *Empantallados. Cómo educar con éxito a tus hijos en un mundo lleno de pantallas* [Screen-addicts. How to educate your children successfully in a world full of screens] (Ezequiel Delgado-Martín). **Nasarre, E. (Ed.) (2022).** *Por una educación humanista. Un desafío contemporáneo* [In favour of humanistic education. A contemporary challenge] (Clara Ramírez-Torres). **Santos-Rego, M. A., Lorenzo-Moledo, M., & García-Álvarez, J. (Eds.) (2023).** *La educación en red. Una perspectiva multidimensional* [Networked learning. A multidimensional perspective] (Marisol Galdames-Calderón).

637

Table of contents of the year 2023

Índice del año 2023 649

Instructions for authors

Instrucciones para los autores 657

Notice to readers and subscribers

Información para lectores y suscriptores 661

This is the English version of the research articles and book reviews published originally in the Spanish printed version of issue 286 of the **Revista Española de Pedagogía**. The full Spanish version of this issue can also be found on the journal's website <http://revistadepedagogia.org>.



ISSN: 0034-9461 (Print), 2174-0909 (Online)

<https://revistadepedagogia.org/>

Legal deposit: M. 6.020 - 1958

INDUSTRIA GRÁFICA ANZOS, S.L. Fuenlabrada - Madrid

Perfiles de estudiantes universitarios en la competencia aprender a aprender y su relación con el rendimiento académico

University student profiles in the learning to learn competence and their relationship with academic achievement

Dr. Bernardo GARGALLO-LÓPEZ. Catedrático. Universidad de Valencia (bernardo.gargallo@uv.es).

Dr. Gonzalo ALMERICH-CERVERÓ. Titular. Universidad de Valencia (gonzalo.almerich@uv.es).

Dr. Fran-J. GARCÍA-GARCÍA. Ayudante Doctor. Universidad de Valencia (francisco.javier.garcia-garcia@uv.es).

Dra. Inmaculada LÓPEZ-FRANCÉS. Profesora Contratada Doctora. Universidad de Valencia (inmaculada.lopez-frances@uv.es).

Dra. Piedad-M.ª SAHUQUILLO-MATEO. Profesor Titular. Universidad de Valencia (piedad.sahuquillo@uv.es).

Resumen:

Aprender a aprender (AaA) es una competencia clave propuesta por la Comisión Europea para los sistemas educativos (Recomendación del Parlamento Europeo y del Consejo, de 18 de diciembre de 2006, sobre las competencias clave para el aprendizaje permanente; Recomendación del Consejo, de 22 de mayo de 2018, relativa a las competencias clave para el aprendizaje permanente). Se suele pensar que los estudiantes, al incorporarse a la universidad, la manejan suficientemente y que su uso mejora durante sus estudios universitarios, pero hay que verificar este supuesto. El objeti-

vo de este artículo es delimitar el nivel de manejo de la competencia, así como los posibles perfiles de uso de los estudiantes universitarios y su relación con el rendimiento académico. Para ello, utilizamos una muestra de 1234 estudiantes de tres universidades de Valencia (España), de diferentes cursos y áreas de estudios, y les aplicamos el cuestionario CECA-PEU, que evalúa la competencia. Realizamos análisis descriptivos, de clúster, de diferencias y de regresión lineal múltiple. Los sujetos de la muestra exhibieron un nivel aceptable de manejo, aunque con puntuaciones bajas en algunas dimensiones relevantes de AaA.

Fecha de recepción del original: 09-04-2022.

Fecha de aprobación: 05-06-2023.

Cómo citar este artículo: Gargallo-López, B., Almerich-Cerveró, G., García-García, F. J., López-Francés, I., y Sahuquillo-Mateo, P. M.ª (2023). Perfiles de estudiantes universitarios en la competencia aprender a aprender y su relación con el rendimiento académico [University student profiles in the learning to learn competence and their relationship with academic achievement]. *Revista Española de Pedagogía*, 81 (286), 457-487. <https://doi.org/10.22550/REP81-3-2023-02>
<https://revistadepedagogia.org/>

ISSN: 0034-9461 (Impreso), 2174-0909 (Online)

Encontramos dos grupos con dos perfiles de manejo, uno de ellos con competencia alta y el otro con competencia más baja. El alumnado del primer grupo obtuvo mejores calificaciones que el del segundo y los resultados fueron estadísticamente significativos. Se encontraron también diferencias en función del género (con mayor nivel de competencia en las chicas) que no fueron significativas; más pronunciadas fueron, en cambio, las asociadas con curso y con área de estudio. Creemos que esta investigación aporta datos relevantes que pueden interesar a los investigadores. Asimismo, recoge pautas para ayudar a los profesores a trabajar la competencia en los estudios universitarios.

Descriptores: aprendizaje autorregulado, competencia aprender a aprender, educación superior, estrategias de aprendizaje, rendimiento académico.

Abstract:

Learning to learn (LtL) is a key competence that the European Commission has identified for education systems (Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning; Council Recommendation of 22 May 2018 on key competences for lifelong learning). It is usually assumed that students will already handle it well when they start university and that their use of it will improve

during their university studies, but this assumption needs testing. The aim of this article is to establish the level of management of this competence as well as possible profiles of how university students use it and their relationship to academic achievement. To this end, we worked with a sample of 1,234 students from three universities in Valencia (Spain) in different study years and study areas, applying the QELtLCUS questionnaire, which evaluates the competence. We performed descriptive analyses, cluster analysis, analyses of differences, and multiple linear regression analyses. The sample subjects displayed an acceptable level of management, albeit with low scores in some important dimensions of LtL. We found two groups with two management profiles: one with a high competence level and another with a lower competence level. The students in the first group had better scores than those in the second group, with statistically significant results. We also found differences that were not statistically significant by gender, with a higher level of competence in women, with those relating to year and study area being larger. We believe that this research provides relevant data that may be of interest to researchers. It also includes guidance to help teachers work on this competence in university studies.

Keywords: self-regulated learning, learning to learn competence, higher education, learning strategies, academic achievement.

1. Introducción

En la literatura científica, el concepto «aprender a aprender» (AaA o LtL por sus siglas en inglés) ha ido cobrando progresi-

va importancia a partir de los años 80 del siglo pasado, pero no ha sido hasta hace poco tiempo cuando se ha interpretado como una de las competencias clave para

el aprendizaje permanente en el siglo XXI (Recomendación del Parlamento Europeo y del Consejo, de 18 de diciembre de 2006, sobre las competencias clave para el aprendizaje permanente; Recomendación del Consejo, de 22 de mayo de 2018, relativa a las competencias clave para el aprendizaje permanente).

La base teórica de esta competencia proviene principalmente de dos líneas de investigación: la del «aprendizaje estratégico» (*strategic learning*, SL) (Weinstein, 1987) y la del «aprendizaje autorregulado» (*self-regulated learning*, SRL) (Pintrich, 2004; Zimmerman, 2000). Ambas enfatizan la participación activa del alumno en la gestión de su propio proceso de aprendizaje (Weinstein y Acee, 2018). La primera línea se basa en la teoría cognitiva (teoría del procesamiento de la información) y la segunda, en la sociocognitiva.

La literatura que se ha ido elaborando desde la década de 1980 sobre estos dos constructos utiliza de modo corriente el concepto «aprender a aprender» para referirse a ambos, lo que es fácil de constatar en cualquier búsqueda bibliográfica.

Generalmente, tanto el SL como el SRL incluyen tres componentes: cognitivo, metacognitivo y afectivo-motivacional (Boekaerts, 2006; Brandmo *et al.*, 2020; Panadero, 2017; Pintrich, 2004; Weinstein *et al.*, 2000; Zimmerman, 2000).

De hecho, las primeras clasificaciones de estrategias de aprendizaje incluían en ellas componentes cognitivos (estrategias asociativas y de repetición, estrategias

de elaboración y organización de la información), metacognitivos (estrategias de planificación, autorregulación y autoevaluación) y afectivo-motivacionales (control de la ansiedad, actitudes, aspectos motivacionales, autoconcepto, autoestima, autoeficacia) (Beltrán, 1993; Weinstein, 1988; Weinstein y Mayer, 1985; Weinstein *et al.*, 1988). Y los modelos más conocidos de aprendizaje autorregulado, que suelen incluir un ciclo de tres fases (una de planificación, una de ejecución y una de autorreflexión), incorporaban también, en cada una de ellas, componentes cognitivos, metacognitivos y afectivo-motivacionales.

Estas tres dimensiones fueron muy pronto integradas en el concepto AaA: cognitiva (habilidades relacionadas con el procesamiento de la información), metacognitiva (conciencia y gestión de los propios procesos de aprendizaje) y afectivo-motivacional (motivación, actitudes, etc.). Así se recoge en el estudio de Hoskins y Fredriksson (2008) y también en el de Caena y Stringher (2020) cuando se analizan la evolución y los fundamentos de la formulación de la competencia.

Es cierto que las dos teorías mencionadas antes (SL y SRL) ponían el énfasis en el aprendiz como sujeto autónomo que enfrenta su aprendizaje aislado de los demás en cierto modo. Los aspectos sociales han sido más bien periféricos en la teoría sobre aprendizaje estratégico y también en la que se ocupa del aprendizaje autorregulado (Meyer y Turner, 2002), a pesar de que esta última se fundamenta en la teoría sociocognitiva y no exclusivamente en la teoría cognitiva del procesamiento de la

información, como sí hace la primera. Así ocurre en los modelos de aprendizaje autorregulado de Zimmerman (1989, 2000), de Pintrich (2000) y de Boekaerts (1996), tres autores de peso en la temática, donde los aspectos sociales no se mencionan de forma explícita.

De hecho, Zimmerman, que es seguramente el autor más citado en lo que se refiere a la teoría del aprendizaje autorregulado, no incluyó el contexto en su modelo de tres fases cíclicas (Zimmerman, 2000), solo una referencia menor a estrategias específicas de estructuración del entorno. Sin embargo, en sus modelos triádicos, la influencia del contexto y del aprendizaje vicario es fundamental para que se puedan desarrollar habilidades de autorregulación (Zimmerman, 2013). En la misma línea se pronuncian Boekaerts y Niemivirta (2000).

Hay que reseñar que ya Bandura (1986) enfatizaba los aspectos sociales del aprendizaje en su teoría. En Vygotsky (1978), constituyen un elemento crucial, porque el aprendizaje y la hominización se producen en contextos sociales, con los otros, en ese proceso continuo de internalización de las habilidades superiores, que vienen, al principio, prestadas por los sujetos significativos del entorno. De hecho, Vygotsky (1978) y von Glasersfeld (1989) aparecen como figuras relevantes en la literatura sobre la naturaleza social del aprendizaje autorregulado (Thoutenhoofd y Pirrie, 2015).

Con todos estos antecedentes, no es extraño que, en la última década del si-

glo pasado y en la primera del presente, se abriera la puerta a definir y a explorar modelos de regulación que incluyeran regulación compartida (Hadwin *et al.*, 2005; Järvelä *et al.*, 2008; McCaslin y Hickey, 2001) y que pusieran énfasis en el desarrollo de habilidades autorregulatorias desarrolladas en contextos de aprendizaje interactivos y colaborativos (Hadwin *et al.*, 2017; Hadwin y Oshige, 2011; Järvelä y Hadwin, 2015).

Así, se ha ido abriendo paso la perspectiva de la cognición socialmente compartida, de un sujeto que aprende con los otros y de los otros. De modo que hoy se puede hablar de «corregulación» para hacer referencia a la influencia de los otros en los aprendizajes del alumnado y, específicamente, en el aprendizaje de habilidades autorregulatorias.

Con todo ello, la dimensión social del aprender a aprender ha ido cobrando progresiva relevancia en los diversos modelos elaborados, como hacen constar, entre otros, Johnson y Johnson (2017), Panadero (2017), Stringher (2014) o Thoutenhoofd y Pirrie (2015).

Con base en las investigaciones previas, la Unión Europea (UE) incluyó AaA como una competencia clave para los sistemas educativos (Recomendación del Parlamento Europeo y del Consejo, de 18 de diciembre de 2006, sobre las competencias clave para el aprendizaje permanente). En esta primera formulación, se entendía como integradora de las dimensiones cognitiva, afectiva y metacognitiva, con una mención muy somera a aspectos socio-relacionales:

Es la habilidad para iniciar el aprendizaje y persistir en él, para organizar su propio aprendizaje y gestionar el tiempo y la información [...] individualmente o en grupos [...] ser consciente del propio proceso de aprendizaje [...] determinar las oportunidades [...] superar los obstáculos con el fin de culminar el aprendizaje con éxito [...] adquirir, procesar y asimilar nuevos conocimientos y capacidades [...] utilizar y aplicar los nuevos conocimientos y capacidades en muy diversos contextos [...]. La motivación y la confianza son cruciales para [...] esta competencia. (p. 16)

En 2018, el Consejo Europeo (CE) la reformuló como «competencia personal, social y de aprender a aprender» (Recomendación del Consejo, de 22 de mayo de 2018, relativa a las competencias clave para el aprendizaje permanente) y dio mayor importancia a los aspectos sociales que en la anterior definición:

Es la habilidad de reflexionar sobre uno mismo, gestionar el tiempo y la información eficazmente, colaborar con otros de forma constructiva, mantener la resiliencia y gestionar el aprendizaje y la carrera propios. También incluye la habilidad de hacer frente a la incertidumbre y la complejidad, aprender a aprender, contribuir al propio bienestar físico y emocional, [...] expresar empatía y gestionar los conflictos. (p. 5)

Hay una importante coincidencia con la formulación de AaA de 2006, pero con añadidos importantes: empatía y gestión de conflictos; resiliencia y habilidad de gestionar la incertidumbre y el estrés; pensamiento crítico; énfasis en el trabajo en equipo y en la negociación; actitud positiva respecto al bienestar personal, social

y físico, y también con relación al aprendizaje a lo largo de la vida; importancia de la actitud colaborativa; asertividad e integridad, así como desarrollo de una actitud orientada a la resolución de problemas. Como hace constar Caena (2019) y Sala *et al.* (2020), que desarrollaron dos trabajos para la concreción y operativización de AaA para la CE, esta nueva competencia clave integra la anterior competencia AaA e incorpora elementos relevantes de desarrollo personal y social.

El aprender a aprender ha despertado el interés de los investigadores y se han realizado bastantes trabajos, unos con énfasis en la reflexión teórica, en la conceptualización y en la elaboración de modelos, y otros en la evaluación, no tanto en la enseñanza de la competencia. Cabe señalar, entre otros, los trabajos de Caena (2019), Caena y Stringher (2020), Deakin (2007), Deakin *et al.* (2013), García-Bellido *et al.* (2012), Hautamäki *et al.* (2002), Hoskins y Fredriksson (2008), Jornet *et al.* (2012), Martín y Moreno (2007), Moreno y Martín (2014), Muñoz-San Roque *et al.* (2016), Pirrie y Thoutenhoofd (2013), Sala *et al.* (2020), Schulz y Stamov (2010), Stringher (2014), Thoutenhoofd y Pirrie (2015), Villardón-Gallego *et al.* (2013), y Yániz y Villardón-Gallego (2015).

Este interés queda justificado por la relevancia del tema, ya que la adquisición de esta competencia es fundamental para el desarrollo y el desenvolvimiento del alumnado en una sociedad compleja y cambiante (Säfström, 2018), en la que muchos de los actuales empleos desaparecerán y serán necesarias

nuevas competencias y habilidades para los nuevos empleos que emergerán (Caena, 2019). Para el European Political Strategy Centre (2017), AaA es la habilidad más importante de todas porque permite empoderar a los individuos para afrontar los retos en ese mundo complejo y ambiguo (Ehlers y Kellermann, 2019; González-Gascón, 2022; Trilling y Fadel, 2009) a través de soluciones innovadoras (OECD, 2018, 2019).

La pretensión de la UE es que el alumnado acabe la escolarización obligatoria con la competencia AaA suficientemente adquirida, por lo que hay que trabajar su integración en el sistema educativo desde edades tempranas. Sin embargo, eso es más un deseo que una realidad. Más aún, AaA sigue siendo una competencia fundamental también para los universitarios (Malnes *et al.*, 2012), que han de ser más independientes y competentes en la gestión del propio aprendizaje que los estudiantes más jóvenes (Lluch y Portillo, 2018; Ramírez, 2017). Los datos disponibles no parecen confirmar un suficiente dominio de la competencia y también estos alumnos deben recibir entrenamiento en AaA (Cameron y Rideout, 2020; Furtado y Machado, 2016; Morón-Monge y García-Carmona, 2022; Viejo y Ortega-Ruiz, 2018; Zhu y Schumacher, 2016).

Para la incorporación efectiva de AaA en los sistemas educativos, es fundamental disponer de un modelo teórico acordado por la comunidad científica. En este contexto, a partir de la formulación de la competencia realizada por la UE,

se han llevado a cabo, en Europa, trabajos importantes, como el de Hautamäki *et al.* (2002), de la Universidad de Helsinki, que definieron esta competencia y establecieron tres componentes en varias dimensiones y subdimensiones: creencias relacionadas con el contexto (marcos sociales y apoyo percibido para el aprendizaje y el estudio) y con uno mismo (motivación, creencias de control, autoevaluación, etc.), y competencias de aprendizaje (dominio de aprendizaje, dominio de razonamiento, manejo del aprendizaje, autorregulación afectiva). El objetivo era construir un marco para la evaluación. También fue relevante una investigación posterior, la de Hoskins y Fredriksson (2008), que se basaba en la de Hautamäki y en otras previas. Estos investigadores coordinaron el trabajo de la red CRELL (Centre of Educational Research for Lifelong Learning), auspiciada por la CE, para tratar de consensuar un modelo teórico y un protocolo de evaluación. En este caso, se establecieron tres dimensiones: cognitiva, metacognitiva y afectiva, con la pretensión de diseñar un instrumento para evaluar la competencia que sirviese de marco común a los países europeos. Los resultados no satisficieron a los investigadores, pertenecientes a varios equipos de países de la UE, y no se logró consensuar un indicador europeo común. El tema quedó, pues, abierto. Stringher (2014), miembro también de esta red, llevó a cabo un amplio estudio de metaanálisis en un intento por aportar una definición y un modelo integradores. La autora recogió cuatro dimensiones: cognitiva, metacognitiva, afectiva y social.

Con base en estos trabajos, nuestro equipo de investigación ha elaborado un modelo teórico, construido desde el estudio de la literatura científica, que pretende ser integrador e inclusivo, y que sirve de referente para nuestro actual trabajo de investigación. Incluye cinco dimensiones (cognitiva, metacognitiva, afectiva-motivacional, social-relacional y ética) y diversas subdimensiones. El proceso de fundamentación, elaboración y validación del modelo puede consultarse en Gargallo-López *et al.* (2020). Las tres primeras dimensiones derivan del constructo aprendizaje estratégico y autorregulado, y la cuarta, del enfoque sociocognitivo, como hemos explicado antes. La quinta es una aportación nuestra, coherente con la última formulación de la CE y con otras investigaciones (Cortina, 2013; Grace *et al.*, 2017; Kass y Faden, 2018). Creemos que no se puede considerar que un aprendiz es competente en AaA sin tener en cuenta los componentes éticos involucrados en el aprendizaje, en el proceso mismo de aprender, así como en la propia mejora y en la de los demás.

Dada su relevancia, entendemos que es fundamental confirmar si los estudiantes universitarios manejan bien AaA y analizar su incidencia en el rendimiento académico¹, dado que hay pocos estudios disponibles sobre el tema en la educación superior. Para ello, se han recogido datos del proyecto de investigación que se está desarrollando².

Aunque hay bastantes estudios sobre la influencia de las estrategias de aprendizaje y del aprendizaje autorregulado en

el rendimiento académico en alumnado universitario (Kosnin, 2007; Hye-Jung *et al.*, 2017; Lucieer *et al.*, 2016; Lugo *et al.*, 2016; Ning y Downing, 2015; Pérez *et al.*, 2022; Treviños, 2016; Yip, 2019; Zimmerman y Schunk, 2012), no hemos encontrado en la literatura publicaciones donde se analice la relación entre AaA y el rendimiento académico de forma específica.

Si, como pensamos, no todo el alumnado universitario es suficientemente competente en AaA y si su influencia en el rendimiento académico es clara, tendremos argumentos más que suficientes para incluir la competencia en el currículo de los grados universitarios.

Por eso, el objetivo general de este trabajo es determinar los perfiles del alumnado universitario según su desempeño en la competencia AaA y su relación con el rendimiento académico.

Este objetivo general se concreta en objetivos más específicos, tales como: evaluar el nivel de manejo de la competencia en la muestra general; concretar perfiles de manejo de la competencia; analizar posibles diferencias entre los grupos con perfiles diversos en función de algunas variables relevantes, como género, edad, curso o área de estudio; precisar la influencia que, en el rendimiento académico, tienen las diferentes dimensiones de la competencia en función de la pertenencia al grupo o grupos de mayor y menor dominio; y valorar si existe diferencia en el rendimiento académico entre los grupos establecidos por los perfiles de manejo de la competencia.

2. Método y materiales

2.1. Diseño de investigación

Hemos usado un diseño cuantitativo no experimental descriptivo y correlacional (McMillan y Schumacher, 2010).

2.2. Participantes

La muestra la constituyeron 1234 estudiantes de tres universidades de la ciudad de Valencia (España), dos públicas: Universidad de Valencia (UV, 32.09% de la muestra) y Universidad Politécnica de Valencia

(UPV, 35.65%), y una privada: Universidad Católica de Valencia (UCV, 32.25%). Realizamos esta selección mediante un muestreo no probabilístico intencional. El criterio era obtener una muestra suficientemente variada y representativa de grandes ámbitos/áreas de conocimiento diferentes de las tres universidades (ciencias de la salud, ingenierías y arquitecturas, y educación).

Las características de la muestra figuran en la Tabla 1.

TABLA 1. Características de la muestra.

Género	68.14 % (843) chicas, 31.6 % (391) chicos	
Edad	media = 20.7 años; σ = 3.91; rango: 17-55 años	
	17-18: 97 (15.3 %)	17-18: 131 (21.8 %)
	19-22: 460 (72.3 %)	19-22: 384 (63.9 %)
	= > 23: 79 (12.4 %)	= > 23: 86 (14.3 %)
Área de estudio	32.1 % (397) de ciencias de la salud, 32.3 % (399) de educación, 35.6 % (439) de ingeniería y arquitectura	
Curso	1.º: 46.6 % (576)	
	2.º: 24.9 % (308)	
	3.º: 18.8 % (233)	
	4.º: 8.4 % (104)	
	5.º: 1.3 % (16)*	

*Estudiantes de Medicina, un grado con seis cursos académicos.

2.3. Instrumentos

Utilizamos el cuestionario CECAPEU (Gargallo-López *et al.*, 2021), elaborado y validado por el equipo investigador para evaluar la competencia, a partir del modelo ya mencionado (Gargallo-López *et al.*, 2020).

Para valorar el rendimiento académico, calculamos la media de las calificaciones

del primer cuatrimestre, las más cercanas al momento del pase del cuestionario.

El CECAPEU está conformado por 85 ítems con formato de respuesta de escala tipo Likert de cinco grados. Dichos ítems recogen información de las cinco dimensiones del modelo teórico, que integran, a su vez, veintiuna subdimensiones de

primer nivel y algunas subdimensiones de segundo nivel de acuerdo con el modelo teórico. Pueden verse en la Tabla 2, junto con sus datos de fiabilidad, que son adecuados. En las subdimensiones, el índice McDonald ω es mayor de 60, lo que indica que son estables.

La evidencia de validez de contenido del cuestionario se efectuó mediante el análisis y la evaluación de siete jueces expertos (Bandalos, 2018) del contenido de los ítems y de sus agrupamientos en dimensiones y subdimensiones; en concreto, se consideró su validez, inteligibilidad, univocidad y ubicación.

TABLA 2. Estructura del cuestionario y datos de fiabilidad.

DIMENSIONES/ ESCALAS	SUBDIMENSIONES/SUBES- CALAS DE PRIMER NIVEL	SUBDIMENSIONES/SUBESCA- LAS DE SEGUNDO NIVEL
1. COGNITIVA 33 ítems $\alpha = .91$ $\omega = .88$	1. Gestión eficaz de la información $\alpha = .87$ $\omega = .85$	1.1. Búsqueda y selección de información $\alpha = .71$; $\omega = .71$
		1.2. Atención en clase. Toma de apuntes $\alpha = .70$; $\omega = .70$
		1.3. Establecimiento de conexiones entre lo que se aprende y lo aprendido $\alpha = .63$; $\omega = .63$
		1.4. Elaboración y organización de la información $\alpha = .66$; $\omega = .67$
		1.5. Memorización comprensiva $\alpha = .70$; $\omega = .70$
		1.6. Recuperación $\alpha = .63$; $\omega = .62$
		1.7. Organización de la información para su recuperación $\alpha = .56$; $\omega = .56$
	2. Habilidades de comunicación $\alpha = .90$ $\omega = .90$	2.1. Habilidades de expresión/comunicación oral $\alpha = .85$; $\omega = .86$
		2.2. Comunicación en lenguas extranjeras $\alpha = .88$; $\omega = .88$
	3. Manejo de TIC $\alpha = .75$ $\omega = .76$	
	4. Pensamiento crítico/creativo $\alpha = .77$ $\omega = .77$	
2. METACOGNI- TIVA 12 ítems $\alpha = .90$ $\omega = .85$	5. Conocimiento de objetivos, criterios de evaluación y estrategias necesarias $\alpha = .72$ $\omega = .72$	
	6. Planificación, organización y gestión del tiempo $\alpha = .72$ $\omega = .73$	
	7. Autoevaluación, control, autorregulación $\alpha = .64$ $\omega = .64$	
	8. Resolución de problemas $\alpha = .66$ $\omega = .67$	

3. AFECTIVA Y MOTIVACIONAL 16 ítems $\alpha = .86$ $\omega = .87$	9. Motivación intrínseca $\alpha = .72$ $\omega = .72$	
	10. Tolerancia frente a la frustración. Resiliencia $\alpha = .63$ $\omega = .63$	
	11. Atribuciones internas $\alpha = .62$ $\omega = .63$	
	12. Autoconcepto, autoestima, autoeficacia $\alpha = .73$ $\omega = .74$	
	13. Bienestar físico y emocional $\alpha = .77$ $\omega = .77$	
4. SOCIAL/RELACIONAL 15 ítems $\alpha = .90$ $\omega = .90$	14. Ansiedad $\alpha = .73$ $\omega = .73$	
	15. Valores sociales $\alpha = .75$ $\omega = .74$	
	16. Actitudes de cooperación y solidaridad. Relaciones interpersonales $\alpha = .74$ $\omega = .74$	
	17. Trabajo en equipo $\alpha = .84$ $\omega = .84$	17.1. Trabajo y ayuda con compañeros $\alpha = .77$; $\omega = .77$
		17.2. Trabajo en equipo. Implicación personal $\alpha = .75$; $\omega = .75$
5. ÉTICA 9 ítems $\alpha = .86$ $\omega = .86$	18. Control de las condiciones ambientales $\alpha = .70$ $\omega = .70$	
	19. Responsabilidad social en el aprendizaje $\alpha = .71$ $\omega = .71$	
	20. Valores. Honestidad y respeto $\alpha = .78$ $\omega = .78$	
	21. Respeto a los códigos éticos y deontológicos (ítems 83, 84 y 85) $\alpha = .71$ $\omega = .71$	

La validación de constructo del cuestionario se efectuó mediante análisis factorial confirmatorio (AFC) (Gargallo-López *et al.*, 2021) a través del programa lavaan (Rosseel 2012), ya que se disponía de un modelo teórico que se quería validar y también se tenía una idea clara de qué ítems integraban cada dimensión y subdimensión del instrumento (Lloret-Segura *et al.*, 2014). Los indicadores de ajuste del modelo tanto con respecto a cada dimensión como al cuestionario en su conjunto son adecuados (ver Figura 1 y Ta-

blas 3 y 4). Además, en cuanto a la fiabilidad de las dimensiones y a la global del cuestionario, se obtuvieron valores superiores a 70 a partir de los índices α de Cronbach y ω de McDonald (1999) (ver Tabla 5), con lo que la consistencia interna de la escala es apropiada. Por lo tanto, el AFC del cuestionario fue satisfactorio y refrenda la evidencia de la validez de su estructura interna. Para más detalle en lo referente a los resultados de validación del cuestionario, se puede acudir a Gargallo-López *et al.* (2021).

FIGURA 1. Modelo del constructo AaA. Análisis factorial confirmatorio.

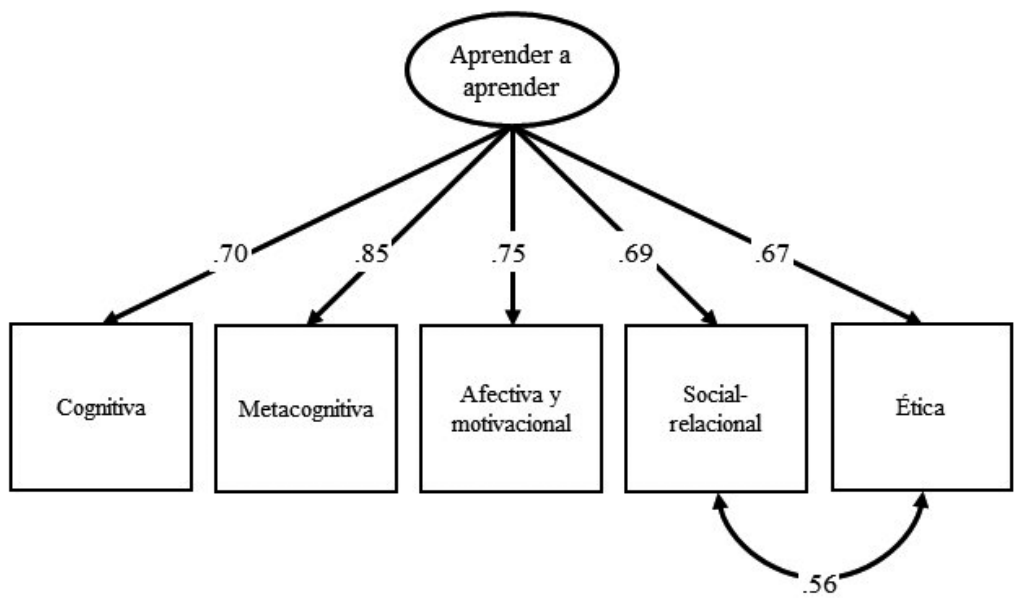


TABLA 3. Indicadores de ajuste del constructo de AaA.

χ^2 RMSEA							
χ^2	g.l.	p	RMSEA	Int 90 %	Pclose	CFI	SRMR
2.659	4	.616	.000	(.000-.036)	.994	1.000	.021

TABLA 4. Indicadores de ajuste de las dimensiones de AaA.

Dimensiones o escalas	χ^2			RMSEA				
	χ^2	g.l.	p	RMSEA	Int 90 %	Pclose	CFI	SRMR
Cognitiva	1564.417	482	.000	.043	(.040-.045)	1.000	.954	.053
Metacognitiva	63.122	50	.101	.015	(.000-.025)	1.000	.997	.030
Afectiva y motivacional	288.564	98	.000	.040	(.034-.045)	.999	.966	.047
Social-relacional	71.461	84	.833	.000	(.000-.010)	1.000	1.000	.032
Ética	14.491	24	.935	.000	(.000-.006)	1.000	1.000	.023

TABLA 5. Coeficientes α de Cronbach y ω de McDonald global y de las dimensiones del cuestionario.

Dimensiones	Coeficientes
Global	$\alpha = .91$ $\omega = .88$
Cognitiva	$\alpha = .91$ $\omega = .88$
Metacognitiva	$\alpha = .90$ $\omega = .85$
Afectiva y motivacional	$\alpha = .86$ $\omega = .87$
Social-relacional	$\alpha = .90$ $\omega = .90$
Ética	$\alpha = .86$ $\omega = .86$

2.4. Procedimiento

Recogimos los datos en línea, durante el primer trimestre del curso 2022-2023. El alumnado respondió en una sesión ordinaria de clase mediante una aplicación web. Se tuvieron en cuenta las directrices del Comité de Ética de la Universidad de Valencia: los alumnos fueron informados del objetivo y del proceso de la investigación, y la participación fue voluntaria. Antes de responder, dieron su consentimiento informado y, con posterioridad, cumplieron el cuestionario, en el que incluyeron datos demográficos, pero no de identificación personal de cara a respetar su anonimato.

2.5. Análisis de datos

El análisis de datos realizado incluye estadísticos descriptivos, análisis clúster, prueba χ^2 y prueba U de Mann-Whitney mediante el programa SPSS 26.0.

En el análisis clúster, hemos utilizado el método bietápico o de dos fases, que produce resultados similares al análisis de perfiles latentes (Benassi *et al.*, 2020).

Las puntuaciones factoriales de cada dimensión y subdimensión las hemos cal-

culado mediante la media obtenida de los ítems de cada una. Esto ha permitido mantener las métricas de la escala y realizar comparaciones entre dimensiones y subdimensiones (DiStefano *et al.*, 2009). Cada dimensión y subdimensión es unifactorial y las cargas de los ítems generalmente no difieren (Abad *et al.*, 2011).

3. Resultados

El apartado de resultados se divide en tres secciones. En la primera, se incluyen estadísticos descriptivos de las dimensiones/subdimensiones de AaA. En la segunda, el perfil del alumnado en función de su manejo de la competencia, donde se concretan sus características. En la tercera, se relaciona el rendimiento académico con el perfil de los grupos.

3.1. Estadísticos descriptivos de la competencia AaA

Dado que pretendemos valorar el nivel de manejo de la competencia en el alumnado del estudio, es relevante analizar las puntuaciones medias en las dimensiones y subdimensiones de la competencia. Si se considera toda la muestra, el alumnado

muestra un nivel medio-alto en las puntuaciones medias (Tabla 6); en concreto, el más alto corresponde a las dimensiones social-relacional y ética, seguidas de la afectivo-motivacional, la metacognitiva y la cognitiva, en que es medio-alto. Las subdimensiones con mayor puntuación son: actitudes de cooperación y solidaridad (4.48 sobre 5); valores, honestidad y respeto (4.41); valores sociales (4.32); y respeto a los códigos éticos (4.31). Las subdimensiones con nivel competencial menor son: control de la ansiedad (3.05) y planificación (3.19). El valor de la desviación típica indica bastante homogeneidad en las respuestas.

En la dimensión cognitiva, la subdimensión gestión de la información alcanza el nivel competencial mayor, con medias más altas en elaboración y organización (4.00), así como en establecimiento de conexiones (3.93), y más baja en la organización para su recuperación (3.74). En las otras tres subdimensiones, aparece un adecuado manejo de las TIC (3.81) y una competencia media tanto en pensamiento crítico y creativo (3.62) como en habilidades de comunicación (3.55 y 3.52).

En la dimensión metacognitiva, el nivel competencial es medio-alto en tres subdimensiones: autoevaluación (3.97), conocimiento de los objetivos (3.95) y resolución de problemas (3.92). En cambio, en planificación, es medio (3.19).

En la dimensión afectivo-motivacional, el nivel competencial es alto en motivación intrínseca (4.19) y en atribuciones internas (4.26); y es medio-alto en autoconcepto, autoestima, autoeficacia (3.98) y en bienestar físico y emocional (3.83). En tolerancia frente a la frustración, es medio y, en control de la ansiedad, medio-bajo.

En la dimensión social-relacional, el nivel competencial es alto en todas las subdimensiones. La media superior se da en actitudes de cooperación y solidaridad (4.48) y en valores sociales (4.32). La más baja, en control de las condiciones ambientales (4.07), aunque sigue siendo una puntuación alta.

En la dimensión ética, el nivel competencial es alto en las tres subdimensiones, con un valor más elevado en valores, honestidad y respeto (4.41), y menor en responsabilidad social (4.06).

TABLA 6. Estadísticos descriptivos de dimensiones y subdimensiones de la competencia AaA.

	Media	Desv. típica	Asimetría	Curtosis	Prueba de normalidad de Kolmogorov-Smirnov	
					Estadístico de prueba	Sig. asintótica
COGNITIVA	3.70	0.52	-0.286	0.378	0.022	.200
Gestión de la información	3.83	0.49	-0.569	1.068	0.036	.001
Búsqueda y selección de información	3.77	0.69	-0.532	0.342	0.126	.000

Atención en clase	3.78	0.89	-0.782	0.403	0.177	.000
Establecimiento de conexiones	3.93	0.75	-0.674	0.624	0.178	.000
Elaboración y organización de la información	4.00	0.85	-0.927	0.614	0.14	.000
Memorización comprensiva	3.72	0.86	-0.634	0.107	0.121	.000
Recuperación de información	3.86	0.75	-0.56	0.341	0.127	.000
Organización de la información para su recuperación	3.74	0.75	-0.472	0.29	0.107	.000
Habilidades de comunicación	3.54	0.78	-0.331	-0.405	0.049	.000
Habilidades de expresión	3.55	0.87	-0.44	-0.106	0.117	.000
Comunicación en lenguas extranjeras	3.52	1.05	-0.467	-0.53	0.102	.000
Manejo TIC	3.81	0.86	-0.643	0.016	0.129	.000
Pensamiento crítico y creativo	3.62	0.75	-0.335	-0.083	0.091	.000
METACOGNITIVA	3.76	0.54	-0.388	0.766	0.051	.000
Conocimiento de los objetivos y criterios de evaluación	3.95	0.75	-0.639	0.286	0.132	.000
Planificación, organización y gestión del tiempo	3.19	0.95	-0.272	-0.402	0.093	.000
Autoevaluación, control, autorregulación	3.97	0.66	-0.69	0.966	0.139	.000
Resolución de problemas	3.92	0.64	-0.701	1.468	0.144	.000
AFECTIVO-MOTIVACIONAL	3.82	0.49	-0.585	1.651	0.037	.001
Motivación intrínseca	4.19	0.72	-1.19	2.062	0.144	.000
Tolerancia frente a la frustración	3.63	0.89	-0.511	0.148	0.143	.000
Atribuciones internas	4.26	0.72	-1.28	2.412	0.186	.000
Autoconcepto, autoestima, autoeficacia	3.98	0.66	-0.739	1.49	0.143	.000
Bienestar físico y emocional	3.83	0.80	-0.661	0.323	0.139	.000
Control ansiedad	3.05	1.06	0.035	-0.798	0.083	.000

SOCIAL-RELACIONAL	4.26	0.51	-1.622	6.492	0.074	.000
Valores sociales	4.32	0.66	-1.348	3.183	0.152	.000
Actitudes de cooperación y solidaridad	4.48	0.58	-1.943	7.049	0.185	.000
Trabajo y ayuda con compañeros	4.15	0.72	-1.038	1.686	0.155	.000
Trabajo en equipo. Implicación personal	4.18	0.67	-1.03	2.223	0.133	.000
Control de las condiciones ambientales	4.07	0.74	-0.943	1.29	0.158	.000
ÉTICA	4.26	0.53	-1.406	5.142	0.080	.000
Responsabilidad social en el aprendizaje	4.06	0.73	-0.859	1.168	0.129	.000
Valores. Honestidad y respeto	4.41	0.63	-1.54	4.472	0.180	.000
Respeto a los códigos éticos y deontológicos	4.31	0.61	-1.378	3.728	0.146	.000

3.2. Perfiles del alumnado en AaA y sus características

Uno de nuestros objetivos era delimitar perfiles de manejo de la competencia para precisar los grupos que de ellos emergiesen, de cara a determinar posibles diferencias entre dichos grupos en variables relevantes y también en el rendimiento académico. Para lograrlo, realizamos un análisis de conglomerados (*cluster analysis*) mediante el procedimiento *two-step* o bietápico. Dada la no normalidad de las variables y los índices de asimetría y curtosis (Tabla 6), opta-

mos por el método *log-likelihood distance* (logaritmo de máxima verosimilitud).

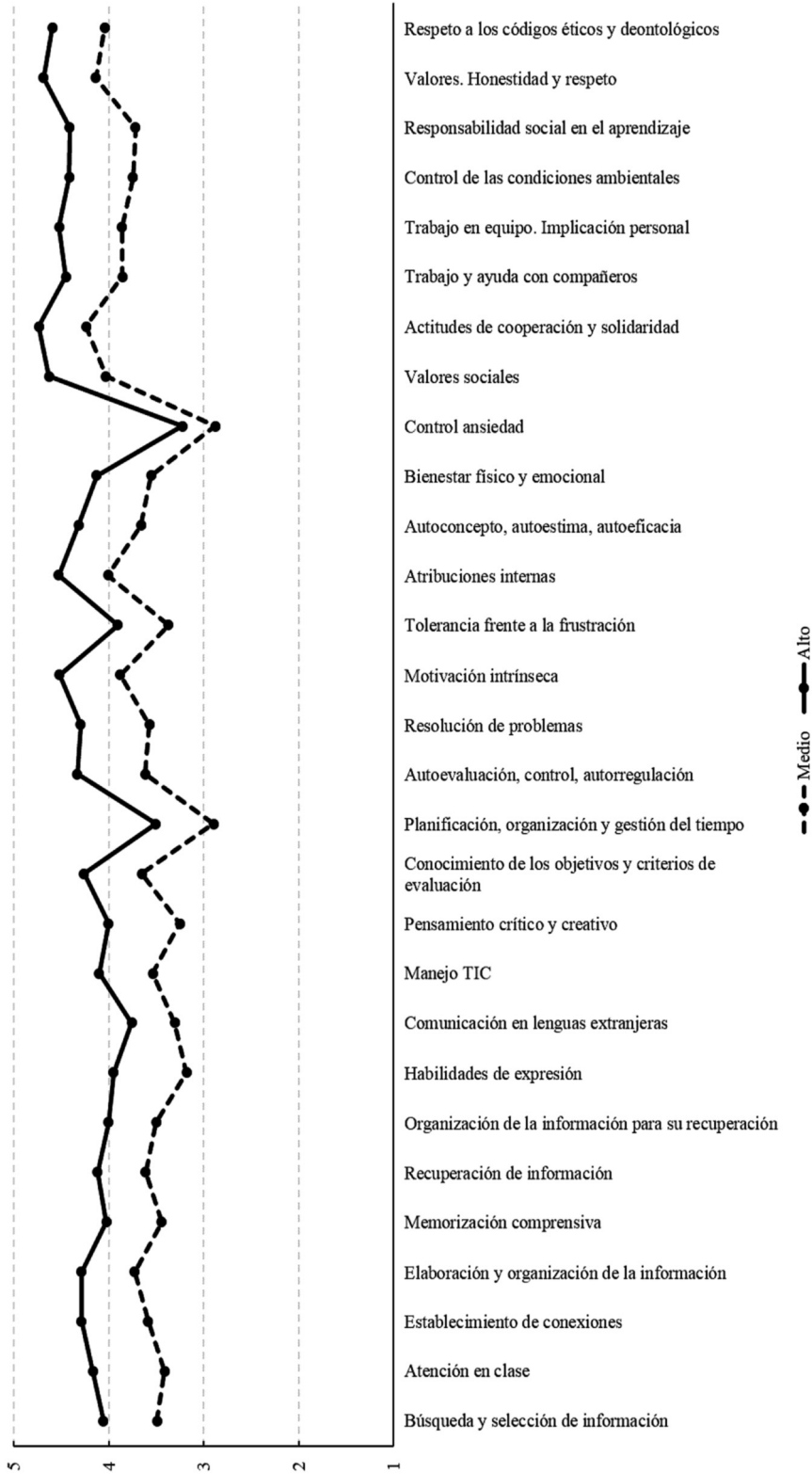
El número de grupos óptimo que estima el método es dos, aunque probamos opciones con tres y cuatro grupos. En función de la parsimonia, el clúster de dos grupos representaba la agrupación más clara y sólida. Los dos grupos presentan tamaño similar (Tabla 7), pero existe una clara separación entre ambos (Figura 2): uno muestra un nivel competencial alto y el otro, un nivel competencial más bajo, de tipo medio.

TABLA 7. Grupos de la competencia AaA.

Grupo competencial	N	% del total
Medio	634	51.4 %
Alto	600	48.6 %
Total	1234	



FIGURA 2. Perfiles de los grupos en competencia AaA.



Las características de ambos grupos son las siguientes:

- Grupo competencial medio. Es el mayor (51.4% del alumnado) y presenta un nivel medio en la competencia. El patrón del grupo es semejante al patrón general, ya comentado (Figura 2). Tanto en la dimensión ética como en la social-relacional, el nivel es medio-alto, mientras que, en las otras tres dimensiones (cognitiva, metacognitiva y afectivo-motivacional), es menor. En las subdimensiones, los

valores máximos y mínimos siguen el patrón general.

- Grupo competencial alto. Es el menor (48.6% del alumnado) y presenta un nivel alto. El patrón es similar al general (Figura 2). Las dimensiones ética y social-relacional tienen las medias más altas, que son algo menores en las otras tres (aunque también altas). Asimismo, los valores máximos y mínimos de las subdimensiones son coherentes con los del patrón general.

TABLA 8. Características de los grupos.

	Grupo medio	Grupo alto
Género	Chicos: 209 (33.2%)	Chicos: 182 (30.3%)
	Chicas: 425 (66.8%)	Chicas: 418 (69.7%)
Edad	17-18: 97 (15.3%)	17-18: 131 (21.8%)
	19-22: 460 (72.3%)	19-22: 384 (63.9%)
	= > 23: 79 (12.4%)	= > 23: 86 (14.3%)
Curso	Primero: 250 (40.0%)	Primero: 326 (54.7%)
	Media edad = 19.86	Media edad = 20.21
	Segundo: 173 (27.7%)	Segundo: 135 (22.7%)
	Media edad = 20.31	Media edad = 19.99
	Tercero: 147 (23.5%)	Tercero: 86 (14.4%)
	Media edad = 21.32	Media edad = 22.01
	Cuarto: 55 (8.8%)	Cuarto: 49 (8.2%)
	Media edad = 22.58	Media edad = 24.27
Área de estudio	Ciencias de la salud: 236 (37.1%)	Ciencias de la salud: 161 (26.8%)
	Ingeniería y arquitectura: 229 (36.0%)	Ingeniería y arquitectura: 229 (35.3%)
	Educación: 171 (26.9%)	Educación: 228 (37.9%)

Una vez establecidos los grupos, necesitábamos conocer sus características y analizar las posibles diferencias entre ellos en función de diversas variables relevantes, tal como se había referido en los objetivos del estudio. Para ello, consideramos como variables personales y contextuales las de género, edad, curso y área de estudio. Respecto al género (Tabla 8), en el grupo de competencia media, el porcentaje de chicos es superior al de chicas, y al contrario en el grupo de competencia alta. La χ^2 de Pearson (.987) no es estadísticamente significativa ($p = .321$), por lo que no hay asociación entre el género y el grupo de competencia.

En relación con la edad, en el grupo competencial medio, la media es 20.60, ligeramente inferior a la del grupo de competencia alto, que es 20.78. Utilizamos la prueba U de Mann-Whitney, dado que no se cumplía el supuesto de normalidad, y encontramos diferencias estadísticamente significativas entre las medias de los dos grupos ($Z = -1.960$; $p = .050$), con lo que, a mayor edad, mayor competencia de aprender a aprender.

Respecto al curso, en el grupo medio, el porcentaje de alumnado en los cursos segundo, tercero y cuarto es superior al del grupo alto. Y al contrario: en el grupo alto, el porcentaje de alumnado de primero es superior al del grupo medio. La χ^2 de Pearson (32.318) es estadísticamente significativa ($p < .001$), por lo que se produce una asociación entre el curso y el grupo competencial.

No obstante, hay que tener presente al analizar la muestra que, en el primer curso, hay un grupo numeroso de alumnos de edad superior a la que correspondería a sus

compañeros, 17-18 años. Dadas, pues, las características de la muestra y el resultado anterior de las diferencias por edad, hemos procedido a comparar, dentro de cada curso, la edad en los dos grupos de AaA. Como se puede apreciar en la Tabla 8, el grupo de competencia alto presenta una edad media superior al de competencia media en cada curso, con excepción de segundo. No obstante, la prueba U de Mann-Whitney no ha arrojado diferencias estadísticamente significativas entre ambos grupos en ningún curso.

Parece, pues, que la proporción mayor o menor de alumnado del grupo más alto de competencia está mediada también por la edad y no solo por el curso que están estudiando.

Por último, atendiendo al área de estudio, en el grupo competencial medio, los sujetos de ciencias de la salud son los más numerosos en porcentaje, seguidos de los de ingeniería y arquitectura y los de educación. Por su parte, en el grupo alto, el mayor porcentaje corresponde al alumnado de educación, seguido por el de ingeniería y arquitectura y el de ciencias de la salud. La χ^2 de Pearson (21.994) es significativa ($p < .001$), por lo que se da una asociación entre el área de estudio y el grupo competencial. Ambos grupos son diferentes en su composición, con mayor porcentaje de educación y menor de ciencias de la salud en el grupo de competencia alto, y al contrario en el grupo medio.

3.3. AaA y rendimiento académico

Llevamos a cabo un análisis de regresión múltiple y otro de diferencias entre los dos grupos para estudiar la relación entre el dominio de la competencia y el

rendimiento académico, tal como habíamos establecido en los objetivos del estudio.

3.3.1. Regresión

A fin de examinar la influencia de las dimensiones de AaA en el rendimiento académico en función de la pertenencia al grupo de mayor o menor competencia, implementamos un modelo de regresión múltiple completo para cada grupo. En él, la variable criterio fue el rendimiento académico y los predictores, las cinco dimensiones de AaA.

El modelo de regresión planteado resultó significativo en el grupo medio ($F_{5,584} = 3.740, p = .002$), con una explicación

por parte de los predictores respecto del rendimiento académico del 2.3% (R^2 ajustada = .023). También fue significativo en el grupo alto ($F_{5,563} = 9.183, p < .001$), con una explicación del 6.8% (R^2 ajustada = .068).

En cuanto a los predictores significativos que contribuyen a la explicación del modelo (Tabla 9), únicamente la dimensión metacognitiva lo fue en el grupo medio. En el caso del grupo alto, todas fueron significativas menos la ética; en concreto, la dimensión cognitiva fue la de mayor contribución y la dimensión social-relacional, la de menor. Asimismo, todas fueron positivas, menos la dimensión social-relacional, que fue negativa.

TABLA 9. Modelo de regresión.

Grupo		B	Error desv.	Beta	t	Sig.
Total	(Constante)	4.708	.303		15.561	.000
	Cognitiva	.305	.079	.140	3.863	.000
	Metacognitiva	.284	.086	.135	3.319	.001
	Afectivo-motivacional	.241	.086	.103	2.800	.005
	Social-relacional	-.121	.101	-.054	-1.195	.232
	Ética	-.041	.093	-.019	-.440	.660
Medio	(Constante)	4.983	0.52		9.582	.000
	Cognitiva	0.227	0.122	0.084	1.867	0.062
	Metacognitiva	0.263	0.127	0.105	2.069	0.039
	Afectiva-motivacional	0.128	0.125	0.05	1.026	0.305
	Social-relacional	-0.004	0.14	-0.002	-0.03	0.976
	Ética	-0.048	0.13	-0.022	-0.367	0.714
Alto	(Constante)	5.61	0.997		5.629	0
	Cognitivo	0.397	0.134	0.136	2.971	0.003
	Metacognitivo	0.336	0.137	0.116	2.453	0.014
	Afectivo-emocional	0.386	0.142	0.119	2.724	0.007
	Social-relacional	-0.462	0.191	-0.111	-2.419	0.016
	Ética	-0.152	0.165	-0.042	-0.924	0.356

3.3.2. Diferencias en el rendimiento en función del grupo de competencia

Presentamos aquí una explicación del resultado obtenido en el análisis clúster sobre el rendimiento académico del alumnado en función del grupo de pertenencia por su dominio de AaA. Para ello, hemos llevado a cabo la prueba U de Mann-Whitney, dado que no se cumple el supuesto de normalidad.

El grupo con una alta competencia obtiene una media de rendimiento académico (7.37) superior a la del grupo con una competencia media (6.92) (Tabla 10). Además, a partir de la prueba U de Mann-Whitney efectuada, la diferencia entre ambas medias es estadísticamente significativa y con un tamaño del efecto pequeño (.040). Por consiguiente, a mayor competencia en AaA, mayor es el rendimiento académico que se obtiene.

TABLA 10. Rendimiento académico en función del grupo.

Grupo	Media	Desviación típica	t	Sig.	Eta cuadrado
Medio	6.92	1.10	-6.997	.<001	.040
Alto	7.37	1.12			

4. Discusión

Nuestra pretensión, en este trabajo, ha sido analizar los perfiles del alumnado universitario según el manejo de la competencia AaA y su posible relación con el rendimiento académico. También hemos intentado valorar el nivel de desempeño de la competencia. Así, de la totalidad de la muestra, las puntuaciones medias de las dimensiones y subdimensiones de la competencia reflejaron un nivel aceptable, más alto en las dimensiones social-relacional y ética. En las otras, las puntuaciones medias fueron también moderadamente altas, con las únicas salvedades de planificación en la dimensión metacognitiva y de control de ansiedad en la afectivo-motivacional.

Otro objetivo del trabajo ha sido concretar perfiles de manejo de la competencia. Por medio del análisis clúster, hemos

delimitado dos grupos de alumnos, de tamaño similar, con diferentes niveles de desempeño de la competencia AaA: uno con un nivel competencial alto y otro con un nivel medio. En el primero, todas las puntuaciones medias de las subdimensiones de la competencia han sido superiores a 4, con solo tres excepciones, que han superado la media de 3: planificación, tolerancia frente a la frustración y control de la ansiedad. En el grupo de competencia más baja, la media de las puntuaciones se ha situado por encima de 3, salvo en los casos de planificación y de control de la ansiedad, en los que ha sido inferior.

También hemos querido precisar la influencia de las diferentes dimensiones de la competencia en el rendimiento académico. El análisis de regresión efectuado ha demostrado que la dimensión metacognitiva

es esencial en el rendimiento académico, al aparecer en ambos grupos.

En el grupo alto, han aparecido tres dimensiones más que explican el rendimiento. Las dos más importantes son la cognitiva y la afectivo-motivacional. Las otras dos contribuyen un poco menos, si bien alcanzan mayores puntuaciones que en el grupo medio. La social-relacional, en cambio, resulta negativa.

Por lo tanto, en el grupo alto, la gestión de la información desde un pensamiento crítico y creativo es fundamental en la construcción del conocimiento, siempre desde una atribución interna y una motivación intrínseca (Figura 2). También este grupo posee un dominio alto de la competencia social-relacional, mayor que el del grupo medio. No obstante, la relación negativa con el rendimiento académico sugiere que, para la construcción del conocimiento, es básica la gestión de la información autónoma, aunque se cuente con apoyo del trabajo en equipo (Tabla 9).

Otro de los objetivos ha sido valorar si existe diferencia en el rendimiento académico entre los grupos de diferente manejo de la competencia. Observamos que el alumnado del grupo de más alto nivel de dominio de la competencia obtuvo mejores calificaciones que el del otro grupo; los resultados fueron estadísticamente significativos. No hemos hallado estudios que analizaran específicamente la competencia AaA y su relación con el rendimiento académico en estudiantes universitarios, por lo que esta es una aportación relevante de nuestro trabajo. Sí los hay que estudian la

relación de las estrategias de aprendizaje y el aprendizaje autorregulado (constructos conectados con AaA) con el rendimiento, en los que se ha comprobado su influencia. Entre otros, tenemos los trabajos de Ergen y Kanadli (2017), Hye-Jung *et al.* (2017), Lucieer *et al.* (2016), Lugo *et al.* (2016), Ning y Downing (2015), Piovano *et al.* (2018), Sahranavard *et al.* (2018) y Yip (2019).

Pretendíamos también examinar las posibles diferencias entre los grupos con distinto nivel de desempeño competencial en función de diversas variables relevantes.

Al hacerlo, hemos observado que las chicas presentan un mayor dominio de la competencia, aunque sin diferencias estadísticamente significativas, lo que resulta coherente con otros estudios (Ray y Garavalia, 2003; Virtanen y Nevgi, 2010). En cuanto a la edad, las puntuaciones han sido muy similares; no obstante, la media de edad de los sujetos con más competencia es superior en este caso, con diferencias significativas.

En contra de lo que esperábamos, en el grupo de nivel competencial medio, el porcentaje de alumnado de segundo, tercero y cuarto curso ha sido superior al del nivel alto; en cambio, en este último, el número de estudiantes de primero fue superior. En este caso, las diferencias sí son estadísticamente significativas. Por tanto, se establece una asociación entre curso y nivel de competencia, con más porcentaje de alumnado de primero en el grupo de nivel competencial alto que en los otros cursos. Esto es llamativo porque hay estudios que confirman que el alumnado no llega a la universidad lo suficientemente preparado en AaA (Cameron y Rideout,

2020; Furtado y Machado, 2016; Viejo y Ortega-Ruiz, 2018; Zhu y Schumacher, 2016) y se supone que, en la universidad, aprenden a aprender. Habría que seguir indagando con muestras más amplias para ver si estos resultados se confirman. De ser así, sería necesario reflexionar en profundidad sobre las causas de que, en cursos más avanzados, el nivel de competencia en AaA no se incrementa, como sería de esperar, a medida que el alumnado progresa en su formación universitaria. De todas formas, ya hemos visto en los análisis que pertenecer al grupo de mayor competencia también depende de la edad: en todos los cursos, el alumnado del grupo de competencia alta era de mayor edad que el del grupo de competencia media.

Por otra parte, aunque no hemos encontrado trabajos que estudiasen la evolución de la competencia AaA a lo largo de los cursos de los grados, sí hay algunos estudios cercanos a la temática. Lynch (2006) analizó la relación entre diversas estrategias de aprendizaje y el nivel académico en función del curso que se estaba realizando. Así, comprobó que los estudiantes de cursos más avanzados se manejaban mejor en esfuerzo y autoeficacia, mientras que los de primer curso se asociaban más con la motivación extrínseca. Gargallo-López *et al.* (2012) observaron la evolución de las estrategias de aprendizaje durante el primer año de universidad en estudiantes excelentes y medios. Encontraron que los primeros obtenían mejores puntuaciones medias que los segundos en estrategias metacognitivas, afectivas y de procesamiento de la información. También que ambos grupos incrementaban su motivación extrínseca, su ansiedad y sus atribuciones externas, mientras que daban menor

valor a las tareas al finalizar ese año. Higgins *et al.* (2021) analizaron los cambios producidos en el aprendizaje autorregulado de una muestra de estudiantes australianos a lo largo de tres años. Encontraron que, en el primer año, del primer al segundo semestre, descendían las puntuaciones en autoeficacia, sentimiento de valía y competencia académica, estrategias de aprendizaje (que incluían búsqueda, elaboración, organización, pensamiento crítico y autorregulación), manejo del tiempo y lugar de estudio. Sin embargo, en el segundo semestre del tercer año, habían mejorado las puntuaciones de autoeficacia y estrategias de aprendizaje, aunque no las otras dos, que habían disminuido desde la primera medida, tomada en el primer cuatrimestre del primer curso.

Aunque los instrumentos de medida no son los mismos ni tampoco el tipo de estudio (ya que el primero es de tipo transversal, como el nuestro, mientras que los otros dos lo son de tipo longitudinal), se comprueba en ellos que no se produce una mejora de todas las puntuaciones que tienen que ver con las estrategias de aprendizaje y con el aprendizaje autorregulado conforme se avanza de curso: en unos casos, hay avances y, en otros, retrocesos.

Así pues, faltan estudios que profundicen en los hallazgos de este trabajo y sería pertinente hacerlo porque hay preguntas relevantes que merecen respuesta.

Atendiendo al área de estudio, los alumnos de ciencias de la educación se encuentran, en mayor porcentaje, en el grupo competencial alto, seguidos de los de ingeniería y arquitectura, y de los de ciencias

de la salud; estos últimos están, en su mayoría, en el grupo competencial medio. En este caso, las diferencias también son estadísticamente significativas, por lo que existe asociación entre área de estudio y grupo de competencia. Son resultados también peculiares, pues el alumnado que accede a las especialidades de ciencias de la salud (medicina, enfermería y fisioterapia) en la Universidad de Valencia, de la que proviene la muestra de esta área de estudio, necesita unas notas muy altas. Sería necesario indagar más en las causas de que, aparentemente, su desempeño en AaA sea inferior al de estudiantes de otras áreas que no exigen notas tan altas para acceder.

5. Conclusiones, limitaciones del estudio y prospectiva

Los resultados de este trabajo prueban la influencia del dominio de la competencia AaA en el rendimiento académico, por lo que es previsible pensar que un incremento de esta lo podría mejorar. Esto nos anima a proponer al profesorado universitario que trabaje dicha competencia en sus materias para favorecer su desempeño en el alumnado. Aunque en la muestra se encuentre un grupo de estudiantes con un nivel de manejo de la competencia relativamente alto, es cierto que otro grupo tiene un nivel menor. Y hay subdimensiones de la competencia que es necesario trabajar por su relevancia y porque las puntuaciones son relativamente bajas: es el caso de la planificación, organización y gestión del tiempo (hay que tener presente, con los datos del estudio, que las estrategias metacognitivas, entre las que se incluye la planificación, son el más claro predictor del rendimiento en ambos

grupos), del pensamiento crítico y creativo, de las habilidades de comunicación oral, de la atención en clase, de la memorización comprensiva y de la comunicación en lenguas extranjeras, de la tolerancia ante la frustración o del control de la ansiedad.

Sería necesario el compromiso del profesorado para llevar a cabo diseños curriculares en que los componentes de la competencia (trabajo en equipo, planificación, pensamiento crítico, gestión de la información...) se integrasen en la docencia de las materias junto con el resto de los contenidos, se concretaran en resultados de aprendizaje e incluyeran procedimientos de enseñanza y evaluación. Creemos que esta es la mejor opción, frente a la aplicación de programas específicos de entrenamiento en enseñanza de estrategias de aprendizaje y autorregulación en tiempos cortos, de los que tenemos ejemplos en la literatura (Hernández *et al.*, 2010; Hofer y Yu, 2009; Norton y Crowley, 1995; Ryder *et al.*, 2017; Wibrowski *et al.*, 2017; Yan *et al.*, 2020). Aunque esta sea una opción aceptable, es con la integración de la enseñanza y la evaluación de AaA en las materias que imparten los profesores como se puede conseguir una mejora eficaz de la competencia al trabajarse sus componentes en contexto, lo que favorece su uso y transferencia.

Para lograrlo y abordar estas tareas, es imprescindible la formación del profesorado de universidad. Desarrollar proyectos de innovación educativa e implementar cursos y talleres sobre la competencia AaA y sobre su enseñanza y evaluación parecen iniciativas necesarias para que la organización la interiorice.

Por último, queremos dejar constancia de algunas limitaciones de este trabajo: la principal es que la muestra no es representativa de la población universitaria, dado que se toman datos de grados de varias áreas de estudio de tres universidades de la ciudad de Valencia; sería conveniente contrastar nuestros resultados con los de muestras que sí lo fueran. Es cierto que la muestra es amplia y, aunque no sea representativa, sí que es lo suficientemente representativa de esas áreas de estudio.

Además, los datos han sido recogidos con un cuestionario con formato de autoinforme, en el que los estudiantes se pronuncian, a partir de su percepción, interpretación y valoración, sobre las afirmaciones de los ítems del instrumento, lo que no siempre refleja si lo que el alumno dice que hace es lo que en realidad hace cuando aprende. Es cierto, por otra parte, que esa es una limitación común en todos los estudios, muchos, que emplean este tipo de instrumentos, ya que su uso es la vía más funcional para recoger datos de muestras amplias.

A pesar de todo ello, creemos que nuestro estudio aporta datos sobre un tema relevante, poco estudiado, y plantea nuevas preguntas que deberían abordarse en investigaciones posteriores.

Una aproximación al tema a partir de un diseño multimetodológico que integre metodología cuantitativa (con información recogida mediante el cuestionario utilizado en este estudio) y cualitativa (a través de métodos de tipo fenomenográfico [entrevista, observación, grupos de discusión]), así como planteamientos de evaluación auténtica, de

modo que se analice el uso de la competencia AaA en la realización de tareas reales (portafolios, ensayos, trabajos cooperativos y sus productos elaborados, etc.) es un reto que se plantea abordar este equipo, al tiempo que anima a otros a hacer lo propio.

Notas

¹ Aunque el concepto «rendimiento académico» es multidimensional y ha sido interpretado de diversas formas, se suele entender como el producto del aprendizaje, como el nivel de conocimientos que uno puede demostrar en un área determinada en comparación con la norma de edad y con el nivel académico de que se trate (Grasso, 2020). En la literatura, el uso más frecuente es el de la calificación promedio que obtiene cada alumno en un período académico determinado, lo que es una forma operativa y funcional de describir los resultados (Tejedor, 1988), y ese es el sentido que le damos en este estudio.

² Se trata del proyecto «La competencia aprender a aprender en la universidad, su diseño y desarrollo curricular. Un modelo de intervención y su aplicación en los grados universitarios» (PID2021-123523NB-I00), financiado por el MCIN/AEI /10.13039/501100011033 y por el Fondo Europeo de Desarrollo Regional (FEDER).

Referencias bibliográficas

- Abad, F., Olea, J., Ponsoda, J. V., y García, C. (2011). *Medición en ciencias sociales y de la salud [Measuring in social and health sciences]*. Síntesis.
- Bandalos, D. L. (2018). *Measurement theory and applications for the social sciences [Teoría de la medición y aplicaciones a las ciencias sociales]*. The Guilford Press.
- Bandura, A. (1986). *Social foundations of thought and action: a social cognitive theory [Fundamentos sociales del pensamiento y la acción: una teoría social cognitiva]*. Prentice-Hall.
- Beltrán, J. (1993). *Procesos, estrategias y técnicas de aprendizaje [Learning procedures, strategies and techniques]*. Síntesis.
- Benassi, M., Garofalo, S., Ambrosini, V., Sant'Angelo, R. P., Raggini, R., De Paoli, G., Ravani, C., Giovagnoli, V., Orsoni, M., y Piraccini, G. (2020). Using two-step cluster analysis and latent class

- cluster analysis to classify the cognitive heterogeneity of cross-diagnostic psychiatric inpatients [Uso del análisis de conglomerados en dos pasos y del análisis de conglomerados de clases latentes para clasificar la heterogeneidad cognitiva de pacientes psiquiátricos hospitalizados con diagnósticos cruzados]. *Frontiers in Psychology*, 11, 1-11. <https://doi.org/10.3389/fpsyg.2020.01085>
- Boekaerts, M. (1996). Self-regulated learning at the junction of cognition and motivation [Aprendizaje autorregulado en la confluencia de cognición y motivación]. *European Psychologist*, 1 (2), 100-112. <https://doi.org/10.1027/1016-9040.1.2.100>
- Boekaerts, M. (2006). Self-regulation and effort investment [Autorregulación e inversión en el esfuerzo]. En E. Sigel, y K. A. Renninger (Eds.), *Handbook of child psychology. Volume four: Child psychology in practice* (pp. 345-377). John Wiley & Sons.
- Boekaerts, M., y Niemivirta, M. (2000). Self-regulated learning: Finding a balance between learning goals and ego-protective goals [Aprendizaje autorregulado: encontrar un equilibrio entre los objetivos de aprendizaje y los objetivos de protección del ego]. En M. Boekaerts, P. R. Pintrich, y M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 417-451). Academic Press. <https://doi.org/10.1016/b978-012109890-2/50042-1>
- Brandmo, C., Panadero, E., y Hopfenbeck, T. (2020). Bridging classroom assessment and self-regulated learning [Tendiendo puentes entre la evaluación en el aula y el aprendizaje autorregulado] *Assessment in Education*, 27 (4), 319-331. <https://doi.org/10.1080/0969594X.2020.1803589>
- Caena, F. (2019). *Developing a European framework for the personal, social & learning to learn key competence (LifEComp). Literature review & analysis of frameworks [Desarrollo de un marco europeo para la competencia clave personal, social y de aprender a aprender (LifEComp). Revisión bibliográfica y análisis de marcos]*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/172528>
- Caena, F., y Stringher, C. (2020). Towards a new conceptualization of learning to learn [Hacia una nueva conceptualización de aprender a aprender]. *Aula Abierta*, 49 (3), 207-216. <https://doi.org/10.17811/rifie.49.3.2020.199-216>
- Cameron, R. B., y Rideout, C. A. (2020). «It's been a challenge finding new ways to learn»: First-year students' perceptions of adapting to learning in a university environment [«Encontrar nuevas formas de aprender ha sido un desafío»: percepciones de los estudiantes de primer curso sobre su adaptación al aprendizaje en un entorno universitario]. *Studies in Higher Education*, 42 (11), 668-682. <https://doi.org/10.1080/03075079.2020.1783525>
- Cortina, A. (2013). ¿Para qué sirve realmente la ética? Paidós.
- Deakin, R. (2007). Learning how to learn: The dynamic assessment of learning power [Aprender a aprender: la evaluación dinámica de la capacidad de aprendizaje]. *The Curriculum Journal*, 18 (2), 135-153. <https://doi.org/10.1080/09585170701445947>
- Deakin, R., Haigney, D., Huang, S., Coburn, T., y Goldspink, Ch. (2013). Learning power in the workplace: The effective lifelong learning inventory and its reliability and validity and implications [El poder del aprendizaje en el lugar de trabajo: el inventario del aprendizaje permanente eficaz y su fiabilidad, validez e implicaciones]. *The International Journal of Human Resource Management*, 24 (11), 2255-2272. <https://doi.org/10.1080/09585192.2012.725075>
- DiStefano, C., Zhu, M., y Mindrila, D. (2009). Understanding and using factor scores: Considerations for the applied researcher [Comprender y utilizar las puntuaciones factoriales: consideraciones para el investigador]. *Practical Assessment, Research, and Evaluation*, 14 (20). <https://doi.org/10.7275/da8t-4g52>
- Ehlers, U. D., y Kellermann, S. A. (2019). *The future skills report. International Delphi survey [Habilidades para el futuro. El futuro del aprendizaje y la educación superior. Resultados de la encuesta internacional Delphi sobre las competencias del futuro]*. Karlsruhe.
- Ergen, B., y Kanadli, S. (2017). The effect of self-regulated learning strategies on academic achievement: A meta-analysis study [El efecto de las estrategias de aprendizaje autorregulado en el rendimiento académico: un estudio de metaanálisis]. *Eurasian Journal of Educational Research*, 17 (69), 55-74. <https://ejer.com.tr/the-effect-of-self-regulated-learning-strategies-on-academic-achievement-a-meta-analysis-study/>
- European Political Strategy Centre. (2017). *10 trends transforming education as we know it. know it [10 tendencias que transforman la educación tal y como la conocemos]*. European Union. <https://op.europa.eu/en/publication-detail/-/publication/227c6186-10d0-11ea-8c1f-01aa75ed71a1>

- Furtado, A., y Machado, A. M. (2016). Learning to learn the nursing consultation: Comprehensive analysis in the perspective of the student [Aprender a aprender la consulta de enfermería: análisis integral desde la perspectiva del estudiante]. *International Archives of Medicine*, 9 (388), 1-9. <https://doi.org/10.3823/2259>
- García-Bellido, R., Jornet, J., y González-Such, J. (2012). Una aproximación conceptual al diseño de instrumentos de evaluación de la competencia aprender a aprender en los profesionales de la educación. *Revista Iberoamericana de Evaluación Educativa*, 5 (1), 204-215. <https://revistas.uam.es/riee/article/view/4436>
- Gargallo-López, B., Almerich, G., Suárez-Rodríguez, J. M., y García-Félix, E. (2012). Estrategias de aprendizaje en estudiantes universitarios excelentes y medios. Su evolución a lo largo del primer año de carrera. *Relieve*, 18 (2). <https://doi.org/10.7203/relieve.18.2.2000>
- Gargallo-López, B., Pérez-Pérez, C., García-García, F. J., Giménez, J. A., y Portillo, N. (2020). La competencia aprender a aprender en la universidad: propuesta de modelo teórico. *Educación XX1*, 23 (1), 19-44. <https://doi.org/10.5944/educXX1.23367>
- Gargallo-López, B., Suárez-Rodríguez, J. M., Pérez-Pérez, C., Almerich, G., y García-García, F. J. (2021). El cuestionario CECAPEU. Un instrumento para evaluar la competencia aprender a aprender en estudiantes universitarios. *Relieve*, 27 (1). <https://doi.org/10.30827/relieve.v27i1.20760>
- González-Gascón, E. (2022). Learning to learn at the university. A marketing experience using the TAM [Aprender a aprender en la universidad. Una experiencia de marketing utilizando el TAM]. *Technology Science and Society Review*, 12 (3), 1-10. <https://doi.org/10.37467/revtechno.v11.4416>
- Grace, S., Innes, E., Patton, N., y Stockhausen, L. (2017). Ethical experiential learning in medical, nursing and allied health education: a narrative review [Aprendizaje ético basado en la experiencia en la educación médica, de enfermería y sanitaria: una reseña]. *Nurse Education Today*, 51, 23-33. <https://doi.org/10.1016/j.nedt.2016.12.024>
- Grasso, P. (2020). Rendimiento académico: un recorrido conceptual que aproxima a una definición unificada para el ámbito superior. *Revista de Educación*, 11 (20), 87-102.
- Hadwin, A. F., Järvelä, S., y Miller, M. (2017). Self-regulation, co-regulation and shared regulation in collaborative learning environments [Autorregulación, coregulación y regulación compartida en entornos de aprendizaje colaborativo]. En D. H. Schunk, y J. A. Greene (Eds.), *Handbook of self-regulation of learning and performance* (2.ª ed.) (pp. 83-106). Routledge / Taylor & Francis Group.
- Hadwin, A. F., y Oshige, M. (2011). Self-regulation, coregulation, and socially shared regulation: Exploring perspectives of social in self-regulated learning theory [Autorregulación, coregulación y regulación socialmente compartida: explorando las perspectivas de lo social en la teoría del aprendizaje autorregulado]. *Teachers College Record*, 113 (2), 240-264.
- Hadwin, A. F., Wozney, L., y Pontin, O. (2005). Scaffolding the appropriation of self-regulatory activity: A socio-cultural analysis of changes in teacher-student discourse about a graduate student portfolio [Andamiaje de la apropiación de la actividad autorreguladora: un análisis sociocultural de los cambios en el discurso profesor-alumno a partir de un portafolio de estudiante de posgrado]. *Instructional Science*, 33 (5-6), 413-450. <https://doi.org/10.1007/s11251-005-1274-7>
- Hautamäki, J., Arinen, P., Niemivirta, M. J., Eronen, S., Hautamäki, A., Kupiainen, S., Lindblom, B., Pakaslahti, L., Rantanen, P., y Scheinin, P. (2002). *Assessing learning-to-learn: a framework [Evaluación del aprender a aprender: un marco de trabajo]*. Opetushallitus.
- Hernández, F., Sales, P. J., y Cuesta, J. D. (2010). Impacto de un programa de autorregulación del aprendizaje en estudiantes de grado. *Revista de Educación*, 353, 571-588.
- Higgins, N. L., Rathner, J. A., y Frankland, S. (2021). Development of self-regulated learning: A longitudinal study on academic performance in undergraduate science [Desarrollo del aprendizaje autorregulado: un estudio longitudinal sobre el rendimiento académico en la licenciatura de ciencias]. *Research in Science & Technological Education*. <https://doi.org/10.1080/02635143.2021.1997978>
- Hofer, B. K., y Yu, S. L. (2009). Teaching self-regulated learning through a «learning to learn» course [Enseñar aprendizaje autorregulado a través de un curso de «aprender a aprender»]. *Teaching of Psychology*, 30 (1), 30-33. https://doi.org/10.1207/S15328023TOP3001_05
- Hoskins, B., y Fredriksson, U. (2008). *Learning to learn: What is it and can it be measured? [¿Qué es*

- aprender a aprender? ¿Puede medirse?]. European Commission, Joint Research Centre, Institute for the Protection and Security of the Citizen y Centre for Research on Lifelong Learning (CRELL).
- Hye-Jung, L., Lee, J., Makara, K.A., Fishman, B.J., y Teasley, S.D. (2017). A cross-cultural comparison of college students' learning strategies for academic achievement between South Korea and the USA [Una comparación entre estudiantes universitarios Corea del Sur y EE. UU. sobre las estrategias de aprendizaje que emplean para el rendimiento académico]. *Studies in Higher Education*, 42 (1), 169-183. <https://doi.org/10.1080/03075079.2015.1045473>
- Järvelä, S., y Hadwin, A. F. (2015). Promoting and researching adaptive regulation: New frontiers for CSCL research [Fomento e investigación de la regulación adaptativa: nuevas fronteras para la investigación del CSCL]. *Computers in Human Behavior*, 52, 559-561. <https://doi.org/10.1016/j.chb.2015.05.006>
- Järvelä, S., Järvenoja, H., y Veermans, M. (2008). Understanding dynamics of motivation in socially shared learning [Comprender cómo funciona la motivación en el aprendizaje socialmente compartido]. *International Journal of Educational Research*, 47 (2), 122-135. <https://doi.org/10.1016/j.ijer.2007.11.012>
- Johnson, D. W., y Johnson, R. T. (2017, 22-23 de septiembre). *Cooperative learning [Aprendizaje cooperativo]* [Ponencia plenaria]. I Congreso Internacional de Innovación Educativa, Zaragoza, España. https://2017.congresoinnovacion.educa.aragon.es/documents/48/David_Johnson.pdf
- Jornet, J. J., García-Bellido, R., y González-Such, J. (2012). Evaluar la competencia aprender a aprender: una propuesta metodológica. *Profesorado. Revista de Currículum y Formación del Profesorado*, 16 (1), 103-123. <http://hdl.handle.net/10481/23009>
- Kass, M., y Faden, R. R. (2018). Ethics and learning health care: The essential roles of engagement, transparency, and accountability [Ética y aprendizaje en la atención sanitaria: las funciones esenciales del compromiso, la transparencia y la rendición de cuentas]. *Learning Health Systems*, 2 (4), 1-3. <https://doi.org/10.1002/lrh2.10066>
- Kosnín, A. M. (2007). Self-regulated learning and academic achievement in Malaysian undergraduates [Aprendizaje autorregulado y rendimiento académico de estudiantes de grado en Malasia]. *International Educational Journal*, 8 (1), 221-228.
- Lloret-Segura, S., Ferreres-Traver, A., Hernández-Baeza, A., y Tomás-Marco, I. (2014). El análisis factorial exploratorio de los ítems: una guía práctica, revisada y actualizada. *Anales de Psicología*, 30 (3), 1151-1169. <https://doi.org/10.6018/analesps.30.3.199361>
- Lluch, L., y Portillo, M. C. (2018). La competencia de aprender a aprender en el marco de la educación superior. *Revista Iberoamericana de Educación*, 78 (2), 59-76. <https://doi.org/10.35362/rie7823183>
- Lucieer, S. M., Jonker, L., Visscher, C., Rikers, R. M., y Themmen, A. P. (2016). Self-regulated learning and academic performance in medical education [Aprendizaje autorregulado y rendimiento académico en formación médica]. *Medical Teacher*, 38 (6), 585-593. <https://doi.org/10.3109/0142159X.2015.1073240>
- Lugo, C. S. J., Hernández, G. R., Escoto, M. del C., y Montijo, E. L. (2016). Relación de los estilos y estrategias de aprendizaje con el rendimiento académico en estudiantes universitarios. *Revista de Estilos de Aprendizaje*, 9 (17), 268-288. <https://doi.org/10.55777/rea.v9i17.1054>
- Lynch, D. J. (2006). Motivational factors, learning strategies and resource management as predictors of course grades [Factores motivacionales, estrategias de aprendizaje y gestión de recursos como predictores de las calificaciones del curso]. *College Students Journal*, 40 (2), 423-427.
- Malnes, M., Vuksanović, N., y Simola M. (coords.). (2012). *Bologna with student eyes 2012 [Bolonia con ojos de estudiante 2012]*. European Students' Union ESU. <https://esu-online.org/wp-content/uploads/2016/07/BWSE2012-online1.pdf>
- Martín, E., y Moreno, A. (2007). *Competencia para aprender a aprender*. Alianza Editorial.
- McCaslin, M., y Hickey, D. T. (2001). Self-regulated learning and academic achievement: A Vygotskian view [Aprendizaje autorregulado y rendimiento académico: una visión vygotskiana]. En B. J. Zimmerman, y D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 227-252). Lawrence Erlbaum Associates.
- McDonald, R. P. (1999). *Test theory: A unified treatment [Teoría de los tests: un tratamiento unificado]*. Psychology Press.
- McMillan, J. H., y Schumacher, S. (2010). *Research in education: Evidence-based inquiry [Investigación en educación: aprendizaje basado en evidencias]* (7.ª ed.). Pearson.

- Meyer, D. K., y Turner, J. C. (2002). Using instructional discourse analysis to study the scaffolding of student self-regulation [Uso del análisis del discurso instructivo para estudiar el andamiaje de la autorregulación del alumnado]. *Educational Psychologist*, 37 (1), 17-25. https://doi.org/10.1207/S15326985EP3701_3
- Moreno, A., y Martín, E. (2014). The Spanish approach to learning to learn [Aprender a aprender desde un enfoque español]. En R. Deakin, C. Stringher, y K. Ren (Eds.), *Learning to learn* (pp. 196-213). Routledge.
- Morón-Monge, H., y García-Carmona, A. (2022). Developing prospective primary teachers' learning-to-learn competence through experimental activities [Desarrollo de la competencia aprender a aprender en futuros profesores de primaria mediante actividades experimentales]. *International Journal of Science Education*, 44 (12), 2015-2034. <https://doi.org/10.1080/09500693.2022.2108929>
- Muñoz-San Roque, I., Martín-Alonso, J. F., Prieto-Navarro, L., y Urosa-Sanz, B. (2016). Autopercepción del nivel de desarrollo de la competencia de aprender a aprender en el contexto universitario: propuesta de un instrumento de evaluación. *Revista de Investigación Educativa*, 34 (2), 369-383. <https://doi.org/10.6018/rie.34.2.235881>
- Ning, H. K., y Downing, K. (2015). A latent profile analysis of university students' self-regulated learning strategies [Un análisis del perfil latente de las estrategias de aprendizaje autorregulado de los estudiantes universitarios]. *Studies in Higher Education*, 40 (7), 1328-1346. <https://doi.org/10.1080/03075079.2014.880832>
- Norton, L. S., y Crowley, C. M. (1995). Can students be helped to learn? An evaluation of an approach to learning programme for first year degree students [¿Se puede ayudar a los estudiantes a aprender? Evaluación de un programa de acercamiento al aprendizaje para estudiantes de primer curso de grado]. *Higher Education*, 29, 307-328. <https://doi.org/10.1007/BF01384496>
- OECD. (2018). *PISA Global Competence framework* [Marco de competencias globales de PISA]. OECD. <https://www.oecd.org/pisa/Handbook-PISA-2018-Global-Competence.pdf>
- OECD. (2019). *OECD Future of Education and Skills 2030* [El futuro de la educación y las competencias 2030. Marco conceptual del aprendizaje. Brújula de aprendizaje 2030]. <https://bit.ly/3ksvYDK>
- Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research [Una revisión del aprendizaje autorregulado: seis modelos y cuatro líneas de investigación]. *Frontiers in Psychology*, 8 (422), 1-28. <https://doi.org/10.3389/fpsyg.2017.00422>
- Pérez-González, J.-C., Filella, G., Soldevila, A., Faiad, Y., y Sánchez-Ruiz, M. J. (2022). Integrating self-regulated learning and individual differences in the prediction of university academic achievement across a three-year-long degree [Integración del aprendizaje autorregulado y de las diferencias individuales en la predicción del rendimiento académico universitario en una titulación de tres años de duración]. *Metacognition and Learning*, 17 (3), 1141-1165. <https://doi.org/10.1007/s11409-022-09315-w>
- Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning [El papel de la orientación hacia los objetivos en el aprendizaje autorregulado]. En M. Boekaerts, P. R. Pintrich, y M. Zeidner (Eds.), *Handbook of self-regulation* [Manual de autorregulación] (pp. 452-502). Academic Press. <https://doi.org/10.1016/B978-012109890-2/50043-3>
- Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students [Un marco conceptual para evaluar la motivación y aprendizaje autorregulado en estudiantes universitarios]. *Educational Psychology Review*, 16 (4), 385-407. <https://doi.org/10.1007/s10648-004-0006-x>
- Piovano, S., Roisen, E., Fischer, C., Rodriguez, G., y Victorero, B. (2018). Estrategias de aprendizaje que utilizan los estudiantes de 1.º año de los departamentos de psicología y ciencias pedagógicas, administración y ciencias sociales y sistemas de una universidad privada. *RAES: Revista Argentina de Educación Superior*, 10 (17), 98-114.
- Pirrie, A., y Thoutenhoofd, E. D. (2013). Learning to learn in the European Reference Framework for lifelong learning [Aprender a aprender en el Marco de Referencia Europeo para un aprendizaje permanente]. *Oxford Review of Education*, 39 (5), 609-626. <https://doi.org/10.1080/03054985.2013.840280>
- Ramírez, J. J. (2017). *La competencia «aprender a aprender» en un contexto educativo de ingeniería*

- [Tesis doctoral]. TDX (Tesis Doctorals en Xarxa). <http://hdl.handle.net/10803/456383>
- Ray, M. W., y Garavalia, L. S. (2003, 21-25 de abril). *Gender differences in self-regulated learning, task value, and achievement in developmental college students* [Diferencias de género en cuanto al aprendizaje autorregulado, al valor de la tarea y al logro en estudiantes universitarios en desarrollo] [Presentación de ponencia]. Annual Meeting of the American Educational Research Association, Chicago, EE. UU.
- Recomendación del Parlamento Europeo y del Consejo, de 18 de diciembre de 2006, sobre las competencias clave para el aprendizaje permanente. *Diario Oficial de la Unión Europea*, L 394/10, de 30 de diciembre de 2006. <https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:32006H0962>
- Recomendación del Consejo, de 22 de mayo de 2018, relativa a las competencias clave para el aprendizaje permanente. *Diario Oficial de la Unión Europea*, C 189/1, de 4 de junio de 2018. [https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:32018H0604\(01\)](https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:32018H0604(01))
- Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling [Lavaan: Un paquete R para el modelado de ecuaciones estructurales]. *Journal of statistical software*, 48 (2), 1-36. <https://doi.org/10.18637/jss.v048.i02>
- Ryder, G., Rusell, P., Burton, M. Quinn, P., y Daly, S. (2017). Embedding peer support as a core learning skill in higher education [Integrar el apoyo entre iguales como competencia básica en la enseñanza superior]. *Journal of Information Literacy*, 11 (1), 184-302. <https://arrow.tudublin.ie/ittsupart/10/>
- Säfsström, C. A. (2018). Liveable life, educational theory and the imperative of constant change [Vida aceptable, teoría educativa y el imperativo del cambio constante]. *European Educational Research Journal*, 17 (5), 621-630. <https://doi.org/10.1177/1474904118784480>
- Sahranavard, S., Niri, M. R., y Salehiniya, H. (2018). The relationship between self-regulation and educational performance in students [Relación entre la autorregulación y el rendimiento académico de los estudiantes]. *Journal of Education and Health Promotion*, 7, 154. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6332646/pdf/JEHP-7-154.pdf>
- Sala, A., Punie, Y., Garkov, V., y Cabrera Giraldez, M. (2020). *LifeComp: The European framework for personal, social and learning to learn key competence* [LifeComp: el marco europeo para la competencia clave personal, social y aprender a aprender]. Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/302967>
- Schulz, M., y Stamo, C. (2010). Informal workplace learning: An exploration of age differences in learning competence [Aprendizaje informal en el lugar de trabajo: una exploración de las diferencias de edad en la competencia de aprendizaje]. *Learning and Instruction*, 20 (5), 383-399. <https://doi.org/10.1016/j.learninstruc.2009.03.003>
- Stringer, C. (2014). What is learning to learn? A learning to learn process and output model [¿Qué es aprender a aprender? Un modelo de proceso y resultados de aprender a aprender]. En R. Deakin, C. Stringer, y K. Ren (Eds.), *Learning to learn [Aprender a aprender]* (pp. 9-32). Routledge.
- Tejedor, F. J. (coord.). (1998). *Los alumnos de la Universidad de Salamanca. Características y rendimiento académico*. Ediciones Universidad de Salamanca.
- Thoutenhoofd, E. D., y Pirrie, A. (2015). From self-regulation to learning to learn: Observations on the construction of self and learning [De la autorregulación al aprender a aprender: observaciones sobre la construcción del ser y el aprendizaje]. *British Educational Research Journal*, 41 (1), 72-84. <https://doi.org/10.1002/berj.3128>
- Treviño, L. (2016). *Estrategias de aprendizaje y rendimiento académico en estudiantes universitarios de Huancayo* [Tesis de maestría]. Repositorio de la Universidad Nacional del Centro del Perú. <http://hdl.handle.net/20.500.12894/4485>
- Trilling, B., y Fadel, C. (2009). *21st century skills. Learning for life in our times* [Competencias del siglo XXI. Aprender para vivir en nuestro tiempo]. Jossey-Bass.
- Viejo, C., y Ortega-Ruiz, R. (2018). Competencias para la investigación: el trabajo de fin de Máster y su potencialidad formativa. *Revista de Innovación y Buenas Prácticas Docentes*, 5, 46-56. <http://hdl.handle.net/10396/16951>
- Villardón-Gallego, L., Yáñez, C., Achurra, C., Iraurgi, I., y Aguilar, M. C. (2013). Learning competence

- in university: Development and structural validation of a scale to measure [La competencia para aprender en la universidad: desarrollo y validación estructural de un instrumento de medida]. *Psicodidáctica*, 18 (2), 357-374. <https://doi.org/10.1387/RevPsicodidact.6470>
- Virtanen, P., y Nevgi, A. (2010). Disciplinary and gender differences among higher education students in self-regulated learning strategies [Diferencias en cuanto a disciplina y género entre estudiantes de enseñanza superior en las estrategias de aprendizaje autorregulado]. *Educational Psychology*, 30 (3), 323-347. <https://doi.org/10.1080/01443411003606391>
- von Glasersfeld, E. (1989). Cognition, construction of knowledge, and teaching [Cognición, construcción del conocimiento y enseñanza]. *Synthese*, 80 (1), 121-140. <https://doi.org/10.1007/BF00869951>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* [El desarrollo de los procesos psicológicos superiores]. Harvard University Press.
- Weinstein, C. E. (1987). *LASSI user's manual for those administering the learning and study strategies inventory* [Manual del usuario de LASSI para quienes administran el inventario de estrategias de aprendizaje y estudio]. H&H Publishing Company.
- Weinstein, C. E. (1988). Assessment and training of student learning strategies [Evaluación y entrenamiento de estrategias de aprendizaje de los estudiantes]. En R. R. Schmeck (ed.), *Learning strategies and learning styles* [Estrategias y estilos de aprendizaje] (pp. 291-316). Plenum Press.
- Weinstein, C. E., y Acee, T. W. (2018). Study and learning strategies [Estrategias de estudio y de aprendizaje]. En R. F. Flippo y T. W. Bean (Eds.), *Handbook of college reading and study strategy research* [Manual de investigación sobre lectura y estrategias de estudio en la universidad] (pp. 227-240). Routledge.
- Weinstein, C. E., Husman, J., y Dierking, D. (2000). Self-regulation interventions with a focus on learning strategies. En M. Boekaerts, P. R. Pintrich, y M. Zeider (Eds.), *Handbook of self-regulation* (pp. 727-747). Academic Press. <https://doi.org/10.1016/B978-012109890-2/50051-2>
- Weinstein, C. E., y Mayer, R. E. (1985). The teaching of learning strategies [La enseñanza de estrategias de aprendizaje]. En M. C. Wittrock (Ed.), *Handbook of research on teaching* [Manual de investigación en enseñanza] (pp. 315-327). MacMillan.
- Weinstein, C. E., Zimmerman, S. A., y Palmer, D. R. (1988). Assessing learning strategies: The design and development of the LASSI [Evaluación de estrategias de aprendizaje: diseño y desarrollo del LASSI]. En C. E. Weinstein, E. T. Goetz, y P. A. Alexander (Eds.), *Learning and study strategies* [Estrategias de aprendizaje y de estudio] (pp. 25-40). Academic Press.
- Wibrowski, C. R., Matthews, W. K., y Kitsantas, A. (2017). The role of a skills learning support program on first-generation college students' self-regulation, motivation, and academic achievement: a longitudinal study [El papel de un programa de apoyo al aprendizaje de habilidades en la autorregulación, la motivación y el rendimiento académico de los estudiantes universitarios de primera generación: un estudio longitudinal]. *Journal of College Student Retention: Research, Theory and Practice*, 19 (3), 317-332. <https://doi.org/10.1177/1521025116629152>
- Yan, Z., Chiu, M. M., y Ko, P. Y. (2020). Effects of self-assessment diaries on academic achievement, self-regulation, and motivation [Efectos de los diarios de autoevaluación en el rendimiento académico, la autorregulación y la motivación]. *Assessment in Education: Principles, Policy and Practice*, 27 (5), 562-583. <https://doi.org/10.1080/0969594X.2020.1827221>
- Yániz, C., y Villardón-Gallego, L. (2015). Competencia para aprender. En L. Villardón-Gallego (coord.), *Competencias genéricas en educación superior* (pp. 25-53). Narcea.
- Yip, M. C. W. (2019). The linkage among academic performance, learning strategies and self-efficacy of Japanese university students: A mixed-method approach [La relación entre el rendimiento académico, las estrategias de aprendizaje y la autoeficacia de los estudiantes universitarios japoneses: Un enfoque de métodos mixtos]. *Studies in Higher Education*, 46 (8), 1565-1577. <https://doi.org/10.1080/03075079.2019.1695111>

Zhu, J., y Schumacher, D. J. (2016). Learning to learn and teaching to learn [Aprender a aprender y enseñar a aprender]. *MedEdPublish*, 5, 63. <https://doi.org/10.15694/mep.2016.000063>

Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning [Una visión social cognitiva del aprendizaje académico autorregulado]. *Journal of Educational Psychology*, 81 (3), 329-339. <https://doi.org/10.1037/0022-0663.81.3.329>

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective [Lograr la autorregulación: una perspectiva social cognitiva]. En M. Boekaerts, P. R. Pintrich, y M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-39). Academic Press. <https://doi.org/10.1016/B978-012109890-2/50031-7>

Zimmerman, B. J. (2013). From cognitive modeling to self-regulation: A social cognitive career path [Del modelado cognitivo a la autorregulación: una trayectoria social cognitiva]. *Educational Psychology*, 48 (3), 135-147. <https://doi.org/10.1080/00461520.2013.794676>

Zimmerman, B. J., y Schunk, D. H. (2012). *Self-regulated learning and academic achievement. Theory, research, and practice* [Aprendizaje autorregulado y rendimiento académico. Teoría, investigación y práctica]. Springer-Verlag.

Biografía de los autores

Bernardo Gargallo-López es Catedrático de Teoría de la Educación en la Universidad de Valencia. Primer Premio Nacional de Investigación Educativa en 2000 y en 2002. Su línea de investigación actual y los proyectos competitivos que ha dirigido se centran en la enseñanza y el aprendizaje en la universidad. Dirige el grupo GIPU-EA.

 <https://orcid.org/0000-0002-2805-4129>

Gonzalo Almerich-Cerveró es Profesor Titular del Departamento de Métodos de Investigación en Educación en la Universidad de Valencia. Su trayectoria

investigadora se centra en la integración de las tecnologías de la información y de la comunicación (TIC) en educación, las competencias del siglo XXI, los procesos de aprendizaje del alumnado, la medición educativa y la metodología de la investigación educativa.

 <https://orcid.org/0000-0002-8952-4104>

Fran-J. García-García es Ayudante Doctor en el Departamento de Teoría de la Educación en la Universidad de Valencia. Ganó el Premio Extraordinario de Máster en Educación Especial. Sus últimos trabajos versan sobre el aprendizaje en red, la pedagogía universitaria y el aprendizaje de los estudiantes en educación superior.

 <https://orcid.org/0000-0002-6267-0080>

Inmaculada López-Francés es Doctora en Educación por la Universidad de Valencia y profesora contratada doctora. Premio de Licenciatura y Doctorado por la Universidad de Valencia. Entre sus líneas de investigación, encontramos diversidad sexual y afectiva, identidad y género, y pedagogía universitaria.

 <https://orcid.org/0000-0003-1178-9054>

Piedad-M.^a Sahuquillo-Mateo es Doctora en Educación por la Universidad de Valencia y Profesora Titular de Teoría de la Educación. Sus intereses de investigación se centran en la familia y el menor, y en la pedagogía universitaria.

 <https://orcid.org/0000-0002-8450-2475>

Sumario*

Table of Contents**

Estudios Studies

Kristján Kristjánsson

Phrónesis, metaemociones y educación del carácter
Phronesis, meta-emotions, and character education 437

**Bernardo Gargallo-López, Gonzalo Almerich-Cerveró,
Fran-J. García-García, Inmaculada López-Francés,
y Piedad-M.ª Sahuquillo-Mateo**

*Perfiles de estudiantes universitarios en la
competencia aprender a aprender y su relación con
el rendimiento académico*

*University student profiles in the learning to learn
competence and their relationship with academic
achievement* 457

**Gemma Fernández-Caminero, José-Luis Álvarez-
Castillo, Hugo González-González, y Luis
Espino-Díaz**

*Enseñando moralidad como competencia inclusiva
en educación superior: efectos de la discusión de
dilemas y contribución de la empatía*

*Teaching morality as an inclusive competence in higher
education: Effects of dilemma discussion and contribution
of empathy* 489

Jaime Vilarroig-Martín

*La pedagogía de Joaquín Xirau: entre la tradición
y la modernidad*

Joaquín Xirau's pedagogy: Between tradition and modernity 511

Notas Notes

Ana Romero-Iribas, y Celia Camilli-Trujillo

*Diseño y validación de una Escala de Amistad
de Carácter para jóvenes*

*Design and validation of a Character Friendship Scale
for young adults* 529

**Begoña García-Domingo, Jesús-M. Rodríguez-Mantilla,
y Angélica Martínez-Zarzuelo**

*Instrumento para valorar el impacto del sistema
de acreditación en educación superior: validación
mediante análisis factorial exploratorio*

*An instrument to evaluate the impact of the higher education
accreditation system: Validation through exploratory factor
analysis* 555

**Judit Ruiz-Lázaro, Coral González-Barbera, y José-Luis
Gaviria-Soto**

*La prueba de Historia de España para acceder
a la universidad: análisis y comparación entre
comunidades autónomas*

*The Spanish History test for university entry: Analysis and
comparison among autonomous regions* 579

**Juan-F. Luesia, Juan-F. Plaza, Isabel Benítez, y Milagrosa
Sánchez-Martín**

*Desarrollo y validación del Test de Competencia
Ortográfica (TCORT) en estudiantes universitarios
de nuevo ingreso*

*Development and validation of the Test of Spelling Competence
(TCORT) in incoming university students* 601

* Todos los artículos están también publicados en inglés en la página web de la revista: <https://revistadepedagogia.org/en>.

** All the articles are also published in English on the web page of the journal: <https://revistadepedagogia.org/en>.

Reseñas bibliográficas

Abad, M. J. (Coord.) (2022). *Empantallados. Cómo educar con éxito a tus hijos en un mundo lleno de pantallas* (Ezequiel Delgado-Martín). **Nasarre, E. (Ed.) (2022).** *Por una educación humanista. Un desafío contemporáneo* (Clara Ramírez-Torres). **Santos-Rego, M. A., Lorenzo-Moledo, M., y García-Álvarez, J. (Eds.) (2023).** *La educación en red. Una perspectiva multidimensional* (Marisol Galdames-Calderón). 637

Ignacio Quintanilla Navarro. In memoriam
Ignacio Quintanilla Navarro. In memoriam 649

Índice del año 2023
Table of contents of the year 2023 653

Instrucciones para los autores
Instructions for authors 659

Información para lectores y suscriptores
Notice to readers and subscribers 663



ISSN: 0034-9461 (Impreso), 2174-0909 (Online)

<https://revistadepedagogia.org/>

Depósito legal: M. 6.020 - 1958

INDUSTRIA GRÁFICA ANZOS, S.L. Fuenlabrada - Madrid

University student profiles in the learning to learn competence and their relationship with academic achievement

Perfiles de estudiantes universitarios en la competencia aprender a aprender y su relación con el rendimiento académico

Bernardo GARGALLO-LÓPEZ, PhD. Professor. Universidad de Valencia (bernardo.gargallo@uv.es).

Gonzalo ALMERICH-CERVERÓ, PhD. Associate Professor. Universidad de Valencia (gonzalo.almerich@uv.es).

Fran-J. GARCÍA-GARCÍA, PhD. Associate Professor. Universidad de Valencia (francisco.javier.garcia-garcia@uv.es).

Inmaculada LÓPEZ-FRANCÉS, PhD. Associate Professor. Universidad de Valencia (inmaculada.lopez-frances@uv.es).

Piedad-M.^a SAHUQUILLO-MATEO, PhD. Associate Professor. Universidad de Valencia (piedad.sahuquillo@uv.es).

Abstract:

Learning to learn (LtL) is a key competence that the European Commission has identified for education systems (Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for life-long learning and Council Recommendation of 22 May 2018 on key competences for lifelong learning). It is usually assumed that students will already handle it well when they start university and that their use of it will improve during their university studies, but this assumption needs testing. The aim of this article is to establish the level of management of this

competence as well as possible profiles of how university students use it and their relationship to academic achievement. To this end, we worked with a sample of 1,234 students from three universities in Valencia (Spain) in different study years and study areas, applying the QELtLCUS questionnaire, which evaluates the competence. We performed descriptive analyses, cluster analysis, analyses of differences, and multiple linear regression analyses. The sample subjects displayed an acceptable level of management, albeit with low scores in some important dimensions of LtL. We found two groups with two management profiles: one

Date of reception of the original: 2022-04-09.

Date of approval: 2023-06-05.

This is the English version of an article originally printed in Spanish in issue 286 of the **Revista Española de Pedagogía**. For this reason, the abbreviation EV has been added to the page numbers. Please, cite this article as follows: Gargallo-López, B., Almerich-Cerveró, G., García-García, F. J., López-Francés, I., & Sahuquillo-Mateo, P. M.^a (2023). Perfiles de estudiantes universitarios en la competencia aprender a aprender y su relación con el rendimiento académico [University student profiles in the learning to learn competence and their relationship with academic achievement]. *Revista Española de Pedagogía*, 81 (286), 457-487. <https://doi.org/10.22550/REP81-3-2023-02>

<https://revistadepedagogia.org/>

ISSN: 0034-9461 (Print), 2174-0909 (Online)

with a high competence level and another with a lower competence level. The students in the first group had better scores than those in the second group, with statistically significant results. We also found differences that were not statistically significant by gender, with a higher level of competence in women, with those relating to year and study area being larger. We believe that this research provides relevant data that may be of interest to researchers. It also includes guidance to help teachers work on this competence in university studies.

Keywords: self-regulated learning, learning to learn competence, higher education, learning strategies, academic achievement.

Resumen:

Aprender a aprender (AaA) es una competencia clave propuesta por la Comisión Europea para los sistemas educativos (Recomendación del Parlamento Europeo y del Consejo, de 18 de diciembre de 2006, sobre las competencias clave para el aprendizaje permanente y Recomendación del Consejo, de 22 de mayo de 2018, relativa a las competencias clave para el aprendizaje permanente). Se suele pensar que los estudiantes, al incorporarse a la universidad, la manejan suficientemente y que su uso mejora durante sus estudios universitarios, pero hay que verificar este supuesto. El objetivo de este artículo es delimitar el nivel de ma-

nejo de la competencia, así como los posibles perfiles de uso de los estudiantes universitarios y su relación con el rendimiento académico. Para ello, utilizamos una muestra de 1234 estudiantes de tres universidades de Valencia (España), de diferentes cursos y áreas de estudios, y les aplicamos el cuestionario CECA-PEU, que evalúa la competencia. Realizamos análisis descriptivos, de clúster, de diferencias y de regresión lineal múltiple. Los sujetos de la muestra exhibieron un nivel aceptable de manejo, aunque con puntuaciones bajas en algunas dimensiones relevantes de AaA. Encontramos dos grupos con dos perfiles de manejo, uno de ellos con competencia alta y el otro con competencia más baja. El alumnado del primer grupo obtuvo mejores calificaciones que el del segundo y los resultados fueron estadísticamente significativos. Se encontraron también diferencias en función del género (con mayor nivel de competencia en las chicas) que no fueron significativas; más pronunciadas fueron, en cambio, las asociadas con curso y con área de estudio. Creemos que esta investigación aporta datos relevantes que pueden interesar a los investigadores. Asimismo, recoge pautas para ayudar a los profesores a trabajar la competencia en los estudios universitarios.

Descriptores: aprendizaje autorregulado, competencia aprender a aprender, educación superior, estrategias de aprendizaje, rendimiento académico.

1. Introduction

The concept of “learning to learn” (LtL) has progressively grown in importance in academic literature since the

1980s, but it is only recently that it has been interpreted as a key competence for lifelong learning in the twenty-first century (Recommendation of the European

Parliament and of the Council of 18 December 2006 on key competences for lifelong learning; Council Recommendation of 22 May 2018 on key competences for lifelong learning).

The theoretical basis of this competence principally draws on two lines of research: strategic learning (SL) (Weinstein, 1987) and self-regulated learning (SRL) (Pintrich, 2004; Zimmerman, 2000). Both emphasise students' active participation in the management of their own learning processes (Weinstein & Acee, 2018). The first line is based on cognitive theory (information processing theory) and the second on sociocognitive theory.

The literature since the 1980s on these two constructs commonly has used the term "learning to learn" to refer to both, something that is readily apparent in any bibliographic search.

Typically, both constructs (SL and SRL) include three components: cognitive, metacognitive, and affective-motivational (Boekaerts, 2006; Brandmo et al., 2020; Panadero, 2017; Pintrich, 2004; Weinstein et al., 2000; Zimmerman, 2000).

Indeed, the first classifications of learning strategies included cognitive components (associational and repetition strategies, strategies for preparing and organising information), metacognitive ones (planning, self-regulation, and self-evaluation strategies) and affective-motivational ones (controlling anxiety, attitudes, motivational as-

pects, self-concept, self-esteem, self-efficacy) (Beltrán, 1987; Weinstein, 1988; Weinstein & Mayer, 1985; Weinstein et al., 1988). The best-known models of self-regulated learning (which usually include a three-phase cycle comprising planning, execution, and self-reflection) also included cognitive, metacognitive, and affective-motivational components in these three phases.

These three dimensions were incorporated into the concept of LTL very early on: cognitive (skills related to processing information), metacognitive (conscience and management of one's own learning processes); and affective-motivational (motivation, attitudes, etc.). This is reflected in the study by Hoskins and Fredriksson (2008) and in the one by Caena and Stringher (2020), when the evolution and the foundations of the formulation of the competence are analysed.

It is true that both theories mentioned above (SL and SRL) emphasise the learner as an autonomous subject who faces his or her own learning in isolation from the others in a certain way. Social aspects have been somewhat peripheral in the theory of strategic learning and also in the theory that concerns itself with self-regulated learning (Meyer & Turner, 2002), even though the latter is based on sociocognitive theory and not exclusively on the cognitive theory of information processing, as in the case of the former. This is the situation in the self-regulated learning models of Zimmerman (1989, 2000), Pintrich (2000), and Boekaerts (1996) (three important authors on the

subject) which do not explicitly mention these aspects.

Indeed, Zimmerman, who is certainly the most cited author with regards to the theory of self-regulated learning, did not include context in his model of three cyclical phases (Zimmerman, 2000) other than a minor reference to specific strategies for structuring the surroundings. Nonetheless, in his triadic models, the influence of the context and of vicarious learning is fundamental to the ability to develop self-regulation skills (Zimmerman, 2013). Boekaerts and Niemivirta (2000) make similar arguments.

It should be noted that Bandura (1986) already emphasised the social aspects of learning in his theory, which is a crucial element in Vygotsky (1978), because learning and hominization occur in social contexts with others, in a continuous process of internalisation of higher skills, which are initially provided by significant subjects from the surroundings. In fact, Vygotsky (1978) and von Glasersfeld (1989) are notable figures in the literature on the social nature of self-regulated learning (Thoutenhoofd & Pirrie, 2015).

With all of these precedents, it is no surprise that in the last decade of the previous century and in the first decade of this one the door was opened to the definition and exploration of regulation models that included shared regulation (Hadwin et al., 2005; Järvelä et al., 2008; McCaslin & Hickey, 2001), emphasising

the development of self-regulatory skills developed in interactive and collaborative learning environments (Hadwin et al., 2017; Hadwin & Oshige, 2011; Järvelä & Hadwin, 2015).

Consequently, there has been an openness to the perspective of socially shared cognition, of a subject who learns with others and from others; so that today we can speak of “co-regulation”, referring to the influence of others on a student’s learning and specifically on the learning of self-regulatory skills.

With all of this, the social dimension of learning to learn has constantly gained in importance in the different models developed, as noted, among others, by Johnson and Johnson (2017), Panadero (2017), Stringher (2014), and Thoutenhoofd and Pirrie (2015).

Drawing on previous research, the European Union (EU) included LtL as a key competence for educational systems (Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning). In this original formulation, LtL as a competence is understood to include cognitive, affective, and metacognitive dimensions with a very brief mention of socio-relational aspects:

“Learning to learn” is the ability to pursue and persist in learning, to organise one’s own learning, including through effective management of time and information, both individually and in groups. [...] awareness of one’s learning process [...] identify-

ing available opportunities [...] overcome obstacles in order to learn successfully [...] gaining, processing and assimilating new knowledge and skills [...] use and apply knowledge and skills in a variety of contexts [...]. Motivation and confidence are crucial to an individual's competence. (p. 16)

In 2018, the European Council (EC) reformulated this, setting out the "Personal, Social and Learning to Learn Competence" (Council Recommendation of 22 May 2018 on key competences for lifelong learning), which places more importance on social aspects than in the earlier definition:

Personal, social and learning to learn competence is the ability to reflect upon oneself, effectively manage time and information, work with others in a constructive way, remain resilient and manage one's own learning and career. It includes the ability to cope with uncertainty and complexity, learn to learn, support one's physical and emotional well-being [...] empathize and manage conflict. (p. 5)

There is a significant overlap with the formulation of LtL from 2006, but there are important additions: empathy and conflict management, resilience and the ability to manage uncertainty and stress, critical thinking, emphasis on team work and negotiation, a positive attitude towards personal well-being, social, and physical well-being and also, with regards to lifelong learning, the importance of an attitude of collaboration, assertiveness, and integrity, as well as developing an attitude aimed at solving problems. As Caena (2019) and Sala et al. (2020) note, who carried out two

works for the implementation of LtL for the EC, this new key competence integrates the earlier LtL competence, incorporating significant elements of personal and social development.

Learning to learn has inspired the interest of researchers and numerous works have been published, some emphasising theoretical reflection, conceptualisation, and the elaboration of models and others the evaluation, but not so much the teaching of the competence. Among others, we should note the works by Caena (2019), Caena and Stringher (2020), Deakin (2007), Deakin et al. (2013), García-Bellido et al. (2012), Hautamäki et al. (2002), Hoskins and Fredriksson (2008), Jornet et al. (2012), Martín and Moreno (2007), Moreno and Martín (2014), Muñoz-San Roque et al. (2016), Pirrie and Thoutenhoofd (2013), Sala et al. (2020), Schulz and Stamov (2010), Stringher (2014), Thoutenhoofd and Pirrie (2015), Villardón-Gallego et al., (2013) and Yániz and Villardón-Gallego (2015).

This interest is justified by the importance of the subject, since acquiring this competence is fundamental for students' development and for them to function in a complex and changing society (Säfström, 2018), in which many current jobs will disappear and the new jobs that emerge will require new competences and skills (Caena, 2019). For the European Political Strategy Centre (2017), LtL is the most important skill of all, because it makes it possible to empower individuals to face challenges in this complex and ambiguous world

(Ehlers & Kellermann, 2019; González-Gascón, 2022; Trilling & Fadel, 2009), providing innovative solutions (OECD, 2018, 2019).

The EU's goal is for students who complete compulsory education to have sufficiently developed the LtL competence, and so it is necessary to work on integrating it into the educational system from early ages. Nonetheless, this is more a wish than a reality, and LtL is still a fundamental competence for university students (Malnes et al., 2012) who need to be more independent and competent in managing their own learning than younger students (Lluch & Portillo, 2018; Ramírez, 2017); the available data do not seem to confirm a sufficient command of the competence and these students also need training in LtL (Cameron & Rideout, 2020; Furtado & Machado, 2016; Morón-Monge & García-Carmona, 2022; Viejo & Ortega-Ruiz, 2018; Zhu & Schumacher, 2016).

A theoretical model on which the scientific community agrees is vital to incorporate LtL effectively in educational systems. In this context, starting from the European Union's formulation of the competence, there have been important works in Europe, such as that by Hautamäki et al. (2002), from the University of Helsinki, who defined this competence and established three components in various dimensions and subdimensions: context-related beliefs (societal frames and perceived support for learning and studying), self-related beliefs (learning motivation, control beliefs, self-evaluation, etc.), and learning

competences (learning domain, reasoning domain, management of learning, affective self-regulation). Their aim was to construct a framework for evaluation. A later study by Hoskins and Fredriksson (2008) is also relevant. This was based on the one by Hautamäki et al. and other previous ones. These researchers coordinated the work of the European Union's CRELL network (Centre of Educational Research for Lifelong Learning), sponsored by the EC, to try to agree on a theoretical model and an evaluation protocol. In this case, three dimensions were established: cognitive, metacognitive, and affective, with the goal of designing an instrument to evaluate the competence that would act as a framework for European countries. The results did not satisfy the researchers, who were from various teams from EU member states, who were unable to reach an agreement on a common European indicator. The topic, therefore, remained open. Stringher (2014), also a member of this network, carried out a broad meta-analysis in an attempt to provide an inclusive definition and model. She covers four dimensions: cognitive, metacognitive, affective, and social.

Starting from these works, our research team has developed a theoretical model, constructed from the study of the academic literature, that sets out to be inclusive and comprehensive, and which serves as a reference point for our current research work. It includes five dimensions (cognitive, metacognitive, affective-motivational, social-relational, and ethical) and various subdimensions. The substantiation, formulation, and validation

processes of the model can be consulted in Gargallo-López et al. (2020). The first three dimensions derive from the strategic and self-regulated learning construct, and the fourth from the sociocognitive focus, as explained above. The fifth is our own contribution, and is consistent with the EC's most recent formulation and with other research (Cortina, 2013; Grace et al., 2017; Kass & Faden, 2018). We believe that learners cannot be regarded as competent in LtL if the ethical components involved in learning, in their own personal process of learning, and in their own personal improvement and in that of others are neglected.

Given its importance, we believe that it is vital to establish whether university students manage LtL well and to analyse its impact on academic achievement¹, given that there are few studies available on the topic in higher education. To do so, we have collected data from the research project that is being carried out².

Although there are a number of studies on the influence of learning strategies and self-regulated learning on academic achievement in university students (Kosnir, 2007; Hye-Jung et al., 2017; Lucieer et al., 2015; Lugo et al., 2016; Ning & Downing, 2015; Pérez González et al., 2022; Treviños, 2016; Yip, 2019; Zimmerman & Schunk, 2012), we have not found studies that specifically analyse the relationship between LtL and academic achievement.

If, as we believe, not all university students are sufficiently competent in LtL

and its influence on academic achievement is clear, we will have more than strong enough arguments to include this competence in the curricula of university degrees.

Therefore, the general objective of this work is to determine university students' LtL competence profiles and the relationship of these profiles with academic achievement.

This general aim takes shape in more specific objectives such as: evaluating the level of management of the competence in the general sample; establishing competence management profiles; analysing possible differences between groups with different profiles according to a number of relevant variables such as gender, age, year, or area of study; specifying the influence on academic achievement of the different dimensions of the competence according to belonging to the group or groups with the highest and lowest command; and evaluating whether there is a difference in academic achievement between the groups established by the profiles of management of the competence.

2. Method and materials

2.1. Research design

We used a quantitative non-experimental descriptive correlational design (McMillan & Schumacher, 2010).

2.2. Participants

The sample comprised 1234 students from three universities in the city of

Valencia (Spain), two public ones: the Universidad de Valencia (UV, 32.09% of the sample) and the Universidad Politécnica de Valencia (UPV, 35.65%), and one private: the Universidad Católica de Valencia (UCV, 32.25%). The sample was selected using purposive non-probability sampling, with the criterion being to obtain a suffi-

ciently varied and representative sample from different large fields/areas of knowledge from the three universities (health sciences, engineering and architecture, and education).

Table 1 shows the characteristics of the sample.

TABLE 1. The sample's characteristics.

Gender	68.14% (843) females, 31.6% (391) males	
Age	mean = 20.7 years; σ = 3.91; range: 17-55 years	
	17-18: 97 (15.3%)	17-18: 131 (21.8%)
	19-22: 460 (72.3%)	19-22: 384 (63.9%)
	=> 23: 79 (12.4%)	=> 23: 86 (14.3%)
Study area	32.1 % (397) from health sciences, 32.3 % (399) from education, 35.6% (439) from engineering and architecture	
	1 st : 46.6% (576)	
	2 nd : 24.9% (308)	
Study year	3 rd : 18.8% (233)	
	4 th : 8.4% (104)	
	5 th : 1.3% (16)*	

*Medicine students, a degree with 6 study years.

2.3. Instruments

The QELtLCUS questionnaire was used (Gargallo-López et al., 2021), which the research team drew up and validated to evaluate the competence in question, based on the model mentioned above (Gargallo-López et al., 2020).

To evaluate academic achievement, we calculated the mean of the grades from the first term as these are the ones closest to when the questionnaire was administered.

The QELtLCUS questionnaire comprises 85 items answered on a five-item Likert-type response scale. These gather information from the five dimensions of the theoretical model, which, in turn, contain twenty-one first-level subdimensions and some second-level subdimensions, in accordance with the theoretical model. Table 2 shows these along with their reliability figures, which are adequate. In the subdimensions, the McDonald's ω is greater than .60, meaning that they are stable.

The content validity of the questionnaire was established through analysis and evaluation of the content of the items and of their groupings into dimensions and subdimensions by seven experts (Bandalos, 2018), considering their validity, intelligibility, absence of ambiguity, and location.

TABLE 2. Structure of the questionnaire and reliability data.

DIMENSIONS/ SCALES	FIRST-LEVEL SUBDIMEN- SIONS/SUBSCALES	SECOND-LEVEL SUBDIMENSIONS/SUBSCALES
1. COGNITIVE 33 items $\alpha = .91$ $\omega = .88$	1. Managing information effectively $\alpha = .87$ $\omega = .85$	1.1. Searching for and selecting information $\alpha = .71$; $\omega = .71$
		1.2. Attention in class. Note taking $\alpha = .70$; $\omega = .70$
		1.3. Establishing connections between what is learning and what is learned $\alpha = .63$; $\omega = .63$
		1.4. Preparing and organising information $\alpha = .66$; $\omega = .67$
		1.5. Comprehensive memorisation $\alpha = .70$; $\omega = .70$
		1.6. Information retrieval $\alpha = .63$; $\omega = .62$
		1.7. Organising information to retrieve it in exams and pieces of work $\alpha = .56$; $\omega = .56$
	2. Communication skills $\alpha = .90$ $\omega = .90$	2.1. Oral communication/expression skills $\alpha = .85$; $\omega = .86$
		2.2. Communicating in foreign languages $\alpha = .88$; $\omega = .88$
	3. Using ICT $\alpha = .75$ $\omega = .76$	
	4. Critical and creative thinking $\alpha = .77$ $\omega = .77$	
2. METACOGNI- TIVE 12 items $\alpha = .90$ $\omega = .85$	5. Knowledge of objectives, evaluation criteria, and strategies $\alpha = .72$ $\omega = .72$	
	6. Planning, organising, and managing time $\alpha = .72$ $\omega = .73$	
	7. Self-evaluation, control, self-regulation $\alpha = .64$ $\omega = .64$	
	8. Solving problems $\alpha = .66$ $\omega = .67$	

3. AFFECTIVE AND MOTIVATIONAL	9. Intrinsic motivation $\alpha = .72$ $\omega = .72$	
	10. Tolerating frustration. Resilience $\alpha = .63$ $\omega = .63$	
	11. Internal attributions $\alpha = .62$ $\omega = .63$	
	12. Self-concept, self-esteem, self-efficacy $\alpha = .73$ $\omega = .74$	
	13. Physical and emotional well-being $\alpha = .77$ $\omega = .77$	
16 items	14. Anxiety $\alpha = .73$ $\omega = .73$	
$\alpha = .86$ $\omega = .87$		
4. SOCIAL/ RELATIONAL	15. Social values $\alpha = .75$ $\omega = .74$	
	16. Attitudes of cooperation and solidarity. Interpersonal relationships $\alpha = .74$ $\omega = .74$	
	17. Teamwork $\alpha = .84$ $\omega = .84$	17.1. Working with and helping classmates $\alpha = .77$; $\omega = .77$
		17.2. Teamwork. Personal engagement $\alpha = .75$; $\omega = .75$
	18. Controlling environmental conditions $\alpha = .70$ $\omega = .70$	
15 items		
$\alpha = .90$ $\omega = .90$		
5. ETHICS	19. Social responsibility in learning $\alpha = .71$ $\omega = .71$	
	20. Values. Honesty and respect $\alpha = .78$ $\omega = .78$	
	21. Respecting ethical and deontological codes (ítems 83, 84 y 85) $\alpha = .71$ $\omega = .71$	
9 items		
$\alpha = .86$ $\omega = .86$		

The questionnaire's construct validation was checked through confirmatory factor analysis (CFA) (Gargallo-López et al., (2021) using the lavaan program (Rosseel 2012), as there was a theoretical model whose validity was to be tested and given that there was a clear idea of what items comprised each dimension and subdimension of the instrument (Lloret-Segura et al., 2014). The indicators of fit of the model at the level of each dimension are adequate, as is that of the questionnaire at a global level (see Figure 1 and Tables 3 and 4). Fur-

thermore, regarding the reliability of the dimensions and the global reliability of the questionnaire, values greater than .70 were obtained for all of the dimensions and globally, based on Cronbach's α and McDonald's ω (1999) (see Table 5), and so the internal consistency of the scale is appropriate. Therefore, the CFA of the questionnaire was satisfactory and supports the evidence for the validity of the internal structure of the questionnaire. For more detail of the results of the validation of the questionnaire, see Gargallo-López et al. (2021).

FIGURE 1. Model of the LtL construct. confirmatory factor analysis.

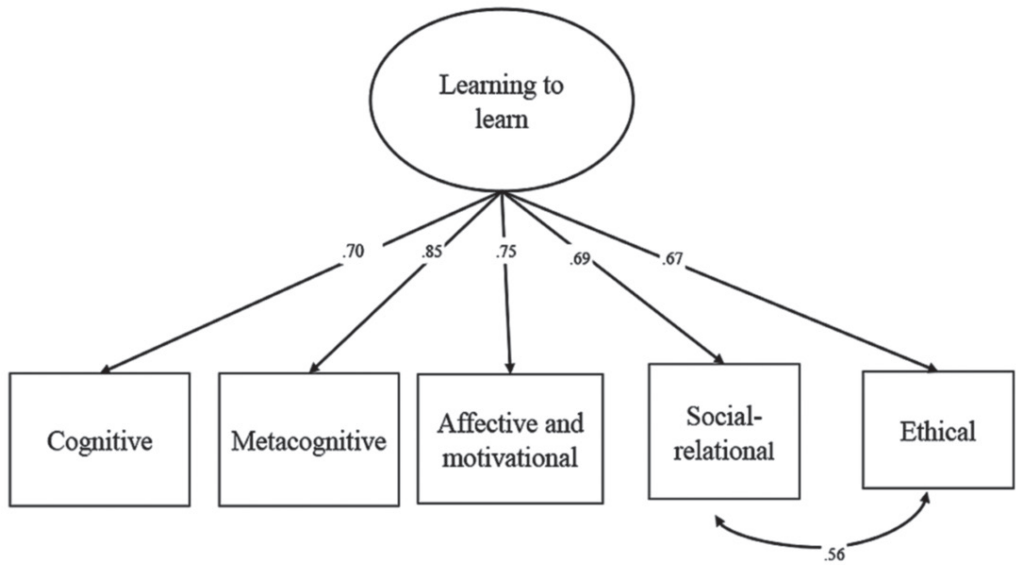


TABLE 3. Indicators of fit of the LtL construct.

χ^2 RMSEA							
χ^2	df	p	RMSEA	Int 90 %	Pclose	CFI	SRMR
2.659	4	.616	.000	(.000-.036)	.994	1.000	.021

TABLE 4. Indicators of fit of the LtL dimensions.

Dimensions or scales	χ^2			RMSEA				
	χ^2	df	p	RM-SEA	Int 90 %	Pclose	CFI	SRMR
Cognitive	1564.417	482	.000	.043	(.040-.045)	1.000	.954	.053
Metacognitive	63.122	50	.101	.015	(.000-.025)	1.000	.997	.030
Affective and motivational	288.564	98	.000	.040	(.034-.045)	.999	.966	.047
Social-relational	71.461	84	.833	.000	(.000-.010)	1.000	1.000	.032
Ethical	14.491	24	.935	.000	(.000-.006)	1.000	1.000	.023

TABLE 5. Global Cronbach’s α and MacDonald’s ω coefficients and Cronbach’s α and MacDonald’s ω coefficients of the dimensions of the questionnaire.

Dimensions	Coefficients
Global	$\alpha = .91$ $\omega = .88$
Cognitive	$\alpha = .91$ $\omega = .88$
Metacognitive	$\alpha = .90$ $\omega = .85$
Affective and motivational	$\alpha = .86$ $\omega = .87$
Social-relational	$\alpha = .90$ $\omega = .90$
Ethical	$\alpha = .86$ $\omega = .86$

2.4. Process

The data were collected online in the first trimester of the 2022–2023 academic year. The students responded in a single ordinary class session through an online application. The requirements of the Ethics Committee of the Universidad de Valencia were taken into account: the students were informed of the aims and process of the research, and participation was voluntary. Before answering, they gave informed consent and then completed the questionnaire, including demographic data, but no data that personally identified them, in order to respect their anonymity.

2.5. Data analysis

The data analysis includes descriptive statistics, cluster analysis, χ^2 test and the Mann-Whitney U test, using the SPSS 26.0 program.

The cluster analysis used the two-step method, which produces similar results to latent class analysis (Benassi et al., 2020).

The factor scores for each dimension and subdimension were calculated using the mean obtained for the items from each

one. This makes it possible to maintain the same metrics for the scale and make comparisons between dimensions and subdimensions (DiStefano et al., 2009). Each dimension and subdimension is unifactorial, and the loadings of the items generally do not differ (Abad et al., 2011).

3. Results

The results section comprises three parts. The first includes descriptive statistics for the LtL dimensions/subdimensions. In the second, the profile of the students depending on how they manage the competence, specifying the characteristics of the groups. The third relates academic achievement to group profiles.

3.1. Descriptive statistics of the LtL competence

As the aim is to evaluate the level of management of the competence of the students studied, it is appropriate to analyse the mean scores in the dimensions and subdimensions of the competence. Considering the sample as a whole, the students’ mean scores display a medium-high level (Table 6), with the high-

est in the social-relational and ethical dimension, followed by the affective-motivational, metacognitive, and cognitive ones, in which it is medium-high. The subdimensions with the highest scores are attitudes of cooperation and solidarity (4.48 out of 5); values, honesty, and respect (4.41); social values (4.32); and respect for ethical codes (4.31). The subdimensions with a lower level of competence are controlling anxiety (3.05), and planning (3.19). The value of the standard deviation indicates considerable homogeneity in the responses.

In the cognitive dimension, the Information management subdimension has the highest competence level with higher means in elaboration and organisation (4.00) and in making connections (3.93), and lower in organising for retrieval (3.74). In the other three subdimensions, there is adequate ICT management (3.81), and intermediate competence in critical and creative thinking (3.62) and in communication skills (3.55 and 3.52).

In the metacognitive dimension, the competence level is medium-high in three

subdimensions: self-evaluation (3.97), knowledge of objectives (3.95), and problem solving (3.92). In contrast, it is medium in planning (3.19).

In the affective-motivational dimension, the competence level is high in intrinsic motivation (4.19) and internal attributions (4.26), medium-high in self-concept and self-esteem (3.98), and physical and emotional well-being (3.83). In tolerating frustration, it is medium, and in controlling anxiety it is medium-low.

In the social-relational dimension, the competence level is high in all of the subdimensions, with the highest means in attitudes of cooperation and solidarity (4.48) and social values (4.32). The lowest mean was in controlling environmental conditions (4.07), although this score was still high.

In the ethical dimension, the competence level is high in the three subdimensions, with the highest level in values, honesty, and respect (4.41), and the lowest in social responsibility (4.06).

TABLE 6. Descriptive statistics of the LtL competence dimensions/subdimensions.

	Mean	SD	Asymmetry	Kurtosis	Kolmogorov-Smirnov normality test	
					Statistics test	Asyptotic significance
COGNITIVE	3.70	0.52	-0.286	0.378	0.022	.200
Information management	3.83	0.49	-0.569	1.068	0.036	.001
Data search and selection	3.77	0.69	-0.532	0.342	0.126	.000
Pay attention in class	3.78	0.89	-0.782	0.403	0.177	.000



Making connections	3.93	0.75	-0.674	0.624	0.178	.000
Elaboration and or- ganisation	4.00	0.85	-0.927	0.614	0.14	.000
Comprehensive memorisation	3.72	0.86	-0.634	0.107	0.121	.000
Data retrieval	3.86	0.75	-0.56	0.341	0.127	.000
Data retrieval organi- sation	3.74	0.75	-0.472	0.29	0.107	.000
Communication skills	3.54	0.78	-0.331	-0.405	0.049	.000
Oral Skills	3.55	0.87	-0.44	-0.106	0.117	.000
Communication in foreign languages	3.52	1.05	-0.467	-0.53	0.102	.000
ICT management	3.81	0.86	-0.643	0.016	0.129	.000
Critical and creative thinking	3.62	0.75	-0.335	-0.083	0.091	.000
METACOGNITIVE	3.76	0.54	-0.388	0.766	0.051	.000
Knowledge of objectives	3.95	0.75	-0.639	0.286	0.132	.000
Planing, organising	3.19	0.95	-0.272	-0.402	0.093	.000
Self-assessment, self-con- trol, self-regulation	3.97	0.66	-0.69	0.966	0.139	.000
Problem solving	3.92	0.64	-0.701	1.468	0.144	.000
AFFECTIVE- MOTIVACIONAL	3.82	0.49	-0.585	1.651	0.037	.001
Intrinsic motivation	4.19	0.72	-1.19	2.062	0.144	.000
Frustration tolerance	3.63	0.89	-0.511	0.148	0.143	.000
Internal attributions	4.26	0.72	-1.28	2.412	0.186	.000
Self-concept, self-steem, self-efficacy	3.98	0.66	-0.739	1.49	0.143	.000
Physical and emotional well-being	3.83	0.80	-0.661	0.323	0.139	.000

Controlling anxiety	3.05	1.06	0.035	-0.798	0.083	.000
SOCIAL-RELATIONAL	4.26	0.51	-1.622	6.492	0.074	.000
Social values	4.32	0.66	-1.348	3.183	0.152	.000
Cooperation and solidarity attitudes	4.48	0.58	-1.943	7.049	0.185	.000
Working and helping colleagues	4.15	0.72	-1.038	1.686	0.155	.000
Teamwork. Personal involvement	4.18	0.67	-1.03	2.223	0.133	.000
Controlling enviromental conditions	4.07	0.74	-0.943	1.29	0.158	.000
ETHICAL	4.26	0.53	-1.406	5.142	0.080	.000
Social responsibility	4.06	0.73	-0.859	1.168	0.129	.000
Values. Honesty and respect	4.41	0.63	-1.54	4.472	0.180	.000
Respect for ethical codes	4.31	0.61	-1.378	3.728	0.146	.000

3.2. Student profiles in LtL and their characteristics

We set out to establish competence management profiles to define the groups that emerged from them, with a view to determining possible differences between these groups in relevant variables and also in academic achievement. To obtain the profiles of the students in the learning to learn competence, a cluster analysis was performed using the two-step process. Given the non-normality of the variables and the skew and kurtosis indices (Table 6),

we opted for the maximum likelihood estimation method.

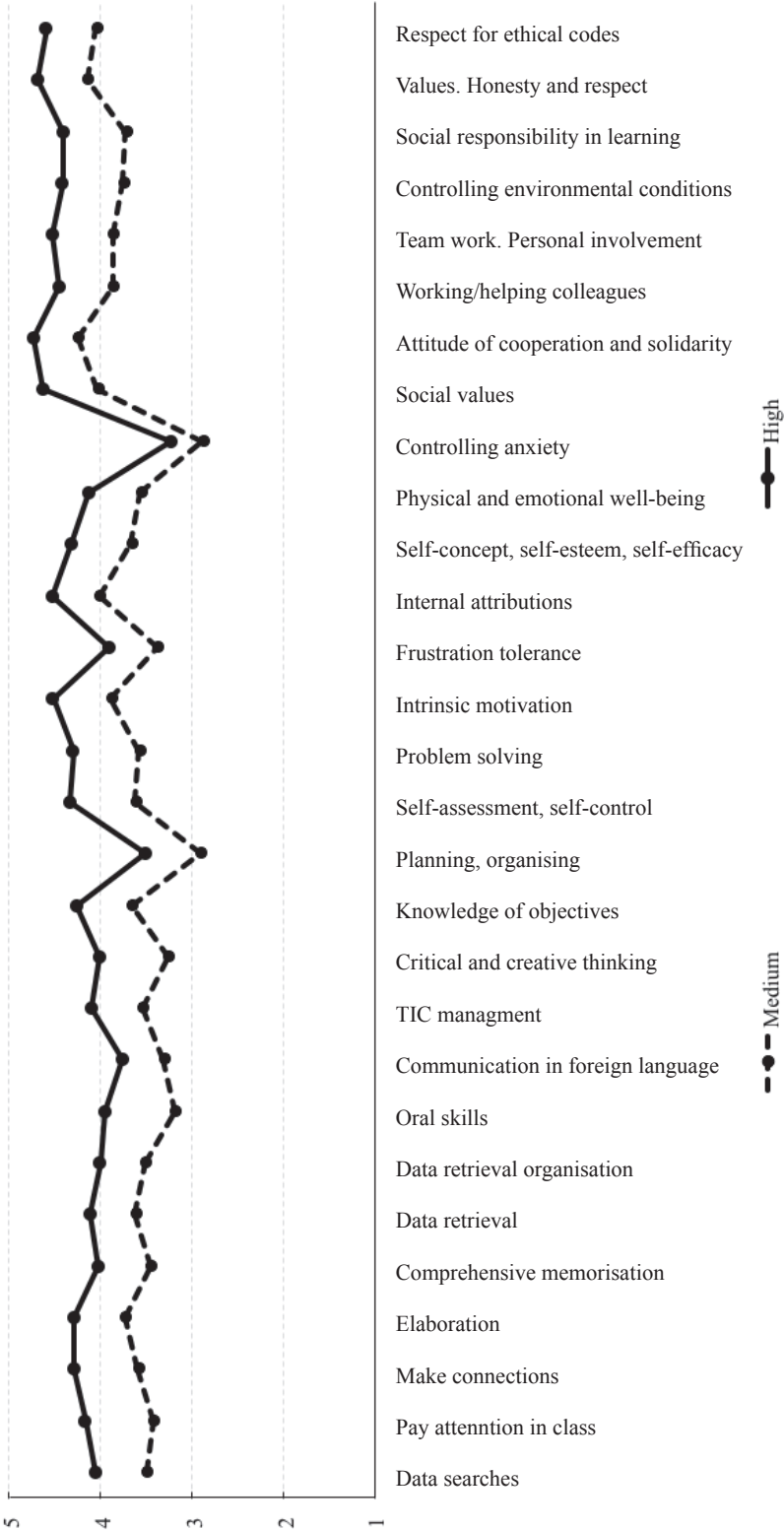
The optimal number of groups that the method estimates is 2, having tested options with 3 and 4 groups. The two-group cluster is most parsimonious as it is the clearest and has the most solid grouping. The two groups are of a similar size (Table 7), with a clear separation between the two (Figure 2), one with a high competence level and another with a lower average competence level.

TABLE 7. Groups of LtL competence.

Group	N	%
Average	634	51.4 %
High	600	48.6 %
Total	1234	



FIGURE 2. The group profiles in the LtL competence



The characteristics of both groups are as follows:

- Intermediate competence group. This is the larger (51.4% of the students) and displays an intermediate competence level. The pattern of the group is similar to the general pattern discussed above (Figure 2). In both the ethical dimension and the social-relational one, the level is medium-high, being lower in the other three dimensions (cognitive, metacognitive, and affective-motivational).

In the subdimensions, the maximum and minimum values follow the general pattern.

- High competence group. This is the smallest (48.6% of the students) and it has a high level. The pattern is similar to the general one (Figure 2). The ethical and social-relational dimensions have the highest means. The other three are lower but are still high. Similarly, the maximum and minimum values of the subdimensions are consistent with those of the general pattern.

TABLE 8. The groups' characteristics.

	Average group	High group
Gender	Males: 209 (33.2%)	Males: 182 (30.3%)
	Females: 425 (66.8%)	Females: 418 (69.7%)
Age	17-18: 97 (15.3%)	17-18: 131 (21.8%)
	19-22: 460 (72.3%)	19-22: 384 (63.9%)
	= > 23: 79 (12.4%)	= > 23: 86 (14.3%)
Study year	1 st : 250 (40.0%)	1 st : 326 (54.7%)
	Average age = 19.86	Average age = 20.21
	2 nd : 173 (27.7%)	2 nd : 135 (22.7%)
	Average age = 20.31	Average age = 19.99
	3 rd : 147 (23.5%)	3 rd : 86 (14.4%)
	Average age = 21.32	Average age = 22.01
	4 th : 55 (8.8%)	4 th : 49 (8.2%)
	Average age = 22.58	Average age = 24.27
Study area	Health sciences: 236 (37.1%)	Health sciences: 161 (26.8%)
	Engineering and architecture: 229 (36.0%)	Engineering and architecture: 229 (35.3%)
	Education: 171 (26.9%)	Education: 228 (37.9%)

Once the groups were established, it was necessary to identify their characteristics and analyse possible differences between them according to a range of relevant variables, as mentioned in the study objectives. To do so, we considered the personal and contextual variables of gender, age, year, and field of study. With regards to gender (Table 8), in the medium competence group, the percentage of males is higher than the percentage of females. The inverse is the case in the high competence group. Pearson's χ^2 (.987) is not statistically significant ($p = .321$), and so there is no association between gender and competence group.

In relation to age, in the medium competence group, the mean is 20.60, slightly below that of the high competence group, which has a mean of 20.78. As the assumption of normality is not fulfilled, we used the Mann-Whitney U test, and found statistically significant differences between the means of the two groups ($Z = -1.960$; $p = .050$). Consequently, the learning to learn competence increases as age increases.

With regards to the year, in the medium group the percentage of students in the second, third, and fourth years is greater than that of the high group, while in the high group, the percentage of students from the first year is greater than in the medium group. Pearson's χ^2 (32.318) is statistically significant ($p < .001$), meaning there is an association between the year and the competence group.

Nonetheless, it is necessary to bear in mind when analysing the sample that in the

first year there is a large group of students who are older than their fellow students, 17–18 years. Given the characteristics of the sample and the previous result for differences by age, we compared the age in the two LtL groups within each year group. As Table 8 shows, the mean age of the high competence group is higher than that of the medium competence group in each year, with the exception of the second year, although the Mann-Whitney U test did not show any statistically significant differences in any year between the two groups.

It appears then that the greater or lesser proportion of students in the higher competence group is also mediated by age and not just by their year.

Finally, considering the field of study, in the medium competence group, health science subjects are more numerous by percentage, followed by engineering and architecture and education, while in the high competence group, the field with the highest percentage is education, followed by engineering and architecture and health sciences. Pearson's χ^2 (21.994) is significant ($p < .001$), giving an association between the area of study and the competence group. Both groups differ in their composition, with a higher percentage of education and lower in health sciences in the high competence group and the inverse in the medium group.

3.3. LtL and academic achievement

Multiple regression analyses and analyses of differences between the two groups were performed to study the relationship between the command of the competence

and academic achievement, as stated in the study objectives.

3.3.1. Regression

To analyse the influence of the LtL dimensions on academic achievement according to whether the subjects were from the higher or lower competence group, we implemented a complete multiple regression model for each group, with the criterion being academic achievement and the predictors the five LtL dimensions.

The proposed regression model was significant in the medium group ($F_{5.563} = 3.740, p = .002$), with an explanation by the predictors

for academic achievement of 2.3% (adjusted $R^2 = .023$). It was also significant in the high group ($F_{5.563} = 9.183, p < .001$), with an explanation of 6.8% (adjusted $R^2 = .068$).

As for significant predictors that contribute to the explanation of the model (Table 9), only the metacognitive dimension was significant in the medium group. In the case of the high group, they were all significant except for the ethical dimension, with the cognitive dimension having the greatest contribution and the social-relational dimension the smallest. They were all positive, apart from the social-relational dimension, which was negative.

TABLE 9. Regression model.

Group		B	Error Dev.	Beta	t	Sig.
Overall	(Constant)	4.708	.303		15.561	.000
	Cognitive	.305	.079	.140	3.863	.000
	Metacognitive	.284	.086	.135	3.319	.001
	Affective-motivational	.241	.086	.103	2.800	.005
	Social-Relational	-.121	.101	-.054	-1.195	.232
	Ethical	-.041	.093	-.019	-.440	.660
Average	(Constant)	4.983	0.52		9.582	.000
	Cognitive	0.227	0.122	0.084	1.867	0.062
	Metacognitive	0.263	0.127	0.105	2.069	0.039
	Affective-motivational	0.128	0.125	0.05	1.026	0.305
	Social-relational	-0.004	0.14	-0.002	-0.03	0.976
	Ethical	-0.048	0.13	-0.022	-0.367	0.714
High	(Constant)	5.61	0.997		5.629	0
	Cognitive	0.397	0.134	0.136	2.971	0.003
	Metacognitive	0.336	0.137	0.116	2.453	0.014
	Affective-motivational	0.386	0.142	0.119	2.724	0.007
	Social-relational	-0.462	0.191	-0.111	-2.419	0.016
	Ethical	-0.152	0.165	-0.042	-0.924	0.356

3.3.2. Differences in achievement by competence group

The relationship obtained in the cluster analysis that explains students' academic achievement by the LtL management group to which they belong is presented here. To do so, we used the Mann-Whitney U test, as the assumption of normality is not fulfilled.

The high-competence group has a higher mean academic achievement (7.37) than the medium-competence group (6.92) (Table 10). Furthermore, according to the Mann-Whitney U test, the difference between both means is statistically significant, and has a small effect size (.040). Consequently, the better the learning to learn competence, the better the academic achievement obtained.

TABLE 10. Academic performance according to group.

Group	Mean	Standard deviation	t	Sig.	Partial eta squared
Average	6.92	1.10	-6.997	.<001	.040
High	7.37	1.12			

4. Discussion

Our aim in this work was to analyse the profiles of university students in LtL competence management and its potential relationship with academic achievement. We also set out to evaluate the level of management of the competence: considering for all of the sample that the mean scores for the dimensions and sub-dimensions of the competence reflected an acceptable level of competence. This was higher in the social-relational and ethical dimensions than in the others, in which the mean scores were also moderately high, with the sole exception of planning in the metacognitive dimension and controlling anxiety in the affective-motivational one.

Another objective of the work was to establish competence management profiles. Using cluster analysis, we found two

similar-sized groups of students with different levels of LtL competence management, one of them with a medium competence level and another with a high level. In the higher competence group, all of the mean scores for the subdimensions of the competence were greater than 4, with just three exceptions, which were greater than the mean of 3: planning, tolerating frustration, and controlling anxiety. In the lower competence group, the mean of the scores was above 3, with two exceptions below 3: planning and controlling anxiety.

We also set out to establish the influence of the different dimensions of the competence on academic achievement. The regression analysis showed that the metacognitive dimension was essential in relation to academic achievement, as it appeared in both groups.

Three more dimensions appeared in the high group that explained the achievement. The two most important dimensions were the cognitive and the affective-motivational. The other two contributed slightly less, albeit with higher scores than the medium group, with the social-relational being negative.

Therefore, in the high group, information management from critical and creative thinking is fundamental in the construction of knowledge, always from an internal attribution and intrinsic motivation (Figure 2). This group also possesses a high command of the social-relational competence, better than that of the intermediate group. Nonetheless, the negative relationship with academic achievement suggests that for the construction of knowledge, personal information management is fundamental even when supported by teamwork (Table 9).

Another objective was to assess whether there was a difference in academic achievement between the groups that manage the competence differently. It was found that the students from the group with the higher command of the competence obtained higher scores than those from the other group and the results were statistically significant. We have not found studies that specifically analyse the LtL competence and its relationship with academic achievement in university students, and so this is an important contribution by our work. There are studies that consider the relationship between learning strategies and

self-regulated learning (constructs that are connected to LtL) and achievement, and their influence has been verified. These include the works by Ergen and Kanadli (2017), Hye-Jung et al. (2017), Lucieer et al. (2016), Lugo et al. (2016), Ning and Downing (2015), Piovano et al. (2018), Sahranavard et al. (2018) and Yip (2019).

We also set out to analyse possible differences between the groups with differing levels of management of the competence depending on different relevant variables.

When analysing this relationship, we found that female subjects had a better command of the competence, albeit without statistically significant differences, in line with other studies (Ray & Garavalia, 2003; Virtanen & Nevgi, 2010). With regards to age, the scores were very similar, with the mean age of the subjects with more competence being higher, in this case with significant differences.

Contrary to expectations, the percentage of students from the second, third, and fourth years was higher in the medium competence group than in the high-level group and in the high-competence group, the percentage of first-year students was higher than in the medium-competence group. In this case, the differences were statistically significant, and there is an association between year and level of competence, with a higher percentage of year-1 students in the high competence group

than in the other years. This is striking because there are studies that confirm that students start university insufficiently prepared for LtL (Cameron & Rideout, 2020; Furtado Rosa & Machado Tinoco, 2016; Viejo & Ortega-Ruiz, 2018; Zhu & Schumacher, 2016) and it is assumed that they will learn to learn at university. Further research with larger samples would be necessary to see whether these results are confirmed. If this were the case, it would be necessary to reflect in-depth on the reasons why the level of LtL competence does not increase in higher years as would be expected as students progress through their university training.

In any case, we have already seen in the analyses that being in the higher competence group also depended on age, given that in all cases the high competence group in each year was older than the medium competence group.

Moreover, although we have not found works that study evolution of the LtL competence through the years of the degrees, there are some studies that are close in subject matter. Lynch (2006) analysed the relationship between various learning strategies and academic level, depending on year in the degree programme, finding that students in higher years did better in effort and self-efficacy while those from the first year were associated more with extrinsic motivation. Gargallo-López et al. (2012) studied the evolution of learning strategies during the first year of university in excellent and intermediate students. They found

that the excellent students had better mean scores than the overall means for metacognitive, affective, and information processing strategies and that both groups increased their extrinsic motivation, their anxiety, and their external attributions and they placed less value on the tasks, at the end of this year. Higgins et al. (2021) studied the changes that occurred in self-regulated learning in a sample of Australian students over three years and they found that, in the first year, from the first to the second semester, the self-efficacy, sense of value and academic competence scores, learning strategies (which included searching, preparing, organising, critical thinking, and self-regulation) time management and place of study all worsened. Nonetheless, in the second semester of the third year, the self-efficacy and learning strategies scores improved, although not the other two, which had reduced since the first measurement, taken in the first term of the first year.

Although the measurement instruments are not the same and neither is the type of study, as the first one is transversal like ours while the other two are longitudinal, it is true that we observed that no improvement occurs in them in any of the scores relating to learning strategies and self-regulated learning, as the students' progress move through the years, given that in some cases there are advances and in others reversals.

So, studies are needed that consider in more depth what we have found in the present work, and it would be appropriate

to do so, because there are important questions that merit an answer.

With regards to field of study, a greater percentage of students from educational sciences were in the high competence group, followed by those from engineering and architecture and those from health sciences, and a greater percentage of this last group is in the medium competence group. In this case, the differences are also statistically significant, with an association between the study area and competence group. These results are also peculiar, because the students who access the health science specialities (medicine, nursing and physiotherapy), at the Universidad de Valencia, from which the sample from this area of study is taken, need very high grades to enter these programmes, and further study is needed on why their achievement in LtL is apparently lower than that of other areas that do not have such high entry requirements.

5. Conclusions, limitations of the study, and future research

The results of this work prove the influence of command of the LtL competence on academic achievement, and so it is possible to assume that an increase in this competence could improve academic performance. This possibility leads us to suggest that university teachers should work on this competence in their modules to foster its improvement in their students. Although the sample includes one group of students with a relatively high level of management of the compe-

tence, it is true that the other group has a lower level. And there are subdimensions of the competence that it is necessary to work on, because of their importance and because the scores in them are relatively low: this is the case of planning, organisation, and time management (it is important to bear in mind, with the data from the study, that metacognitive strategies, which include planning, are the clearest predictor of achievement, as they fulfil this role in both groups), also the case of critical and creative thinking, oral communication skills, attention in class, comprehensive memorisation, and communication in foreign languages, tolerating frustration, and controlling anxiety.

Teachers' commitment would be needed to implement curriculum designs that integrate the components of competence into the teaching of the subjects, along with the other content taught in them, specifying these (teamwork, planning, critical thinking, information management, etc.) in learning outcomes and including teaching and evaluation procedures. We believe that this is the best option, contrasting with the application of specific training programmes for learning strategies and self-regulation in short periods, of which we have examples in the literature (Hernández et al., 2010; Hofer & Yu, 2009; Norton & Crowley, 1995; Ryder et al., 2017; Wibrowski et al., 2017; Yan et al., 2020). Although this would be an acceptable option, it is by integrating the teaching and evaluation of LtL in the subjects that the teachers deliver that an effective improvement

in the competence can be achieved by working on their components in context, thus favouring their use and transfer.

To achieve this and tackle these tasks, it is vital to train university teachers. Developing educational innovation projects and implementing courses and workshops on the LtL competence and on its teaching and evaluation appear to be necessary initiatives for making them widespread in the organisation.

Finally, we should note some limitations of this work. The main one is that the sample is not representative of the university population, as the data were collected from degrees in several areas of study at three universities in the city of Valencia, and it would be advisable to compare our results with those from samples that are representative. It is true that the sample is broad and, although it is not representative, it is sufficiently representative of these study areas.

Furthermore, the data were collected using a self-report questionnaire, in which the students comment on the basis of their perception, interpretation, and evaluation of the statements of the items in the instrument, which does not always reflect whether what the students say they do is what they really do when they learn. However, it is true that this limitation is shared by all of the many studies that use this type of instrument, as using them is the most practical way of collecting data from broad samples.

Despite all of this, we believe that our study provides data on an important subject that has been little studied, and it raises new questions that should be considered in subsequent works.

An approach to the subject that features a multi-methodological design that integrates quantitative methodology, (with information collected through the questionnaire used in this study) and a qualitative methodology (using phenomenographic-type methods [interview, observation, discussion groups] and authentic evaluation approaches in order to analyse use of the LtL competence when doing real tasks [portfolios, essays, groups work, and the outcomes resulting from it, etc.]) is a challenge that this team hopes to tackle, while also encouraging others to do likewise.

Notes

¹ Although the term academic achievement is multidimensional and has been interpreted in various ways, it is usually understood as the product of learning, the level of knowledge someone can demonstrate in a given field compared with the norm for the age and the academic level in question (Grasso, 2020). In the literature, the most frequent use is the average grade that each student obtains in a given academic period, which is an operational and functional way of describing the results (Tejedor, 1988) and this is how we define the term in this study.

² This is the “La competencia aprender a aprender en la universidad, su diseño y desarrollo curricular. Un modelo de intervención y su aplicación en los grados universitarios” project [The learning to learn competence in the university, its design and curriculum development: a model for intervention and its application in university degrees] (PID2021-123523NB-I00), funded by MCIN/AEI /10.13039/501100011033 and by the European Regional Development Fund (ERDF).

References

- Abad, F., Olea, J., Ponsoda, J. V., & García, C. (2011). *Medición en ciencias sociales y de la salud [Measuring in social and health sciences]*. Síntesis.
- Bandalos, D. L. (2018). *Measurement theory and applications for the social sciences*. The Guilford Press.
- Bandura, A. (1986). *Social foundations of thought and action: a social cognitive theory*. Prentice-Hall.
- Beltrán, J. (1993). *Procesos, estrategias y técnicas de aprendizaje [Learning procedures, strategies and techniques]*. Síntesis.
- Benassi, M., Garofalo, S., Ambrosini, V., Sant'Angelo, R. P., Raggini, R., De Paoli, G., Ravani, C., Giovagnoli, V., Orsoni, M., & Piraccini, G. (2020). Using two-step cluster analysis and latent class cluster analysis to classify the cognitive heterogeneity of cross-diagnostic psychiatric inpatients. *Frontiers in Psychology*, 11, 1-11. <https://doi.org/10.3389/fpsyg.2020.01085>
- Boekaerts, M. (1996). Self-regulated learning at the junction of cognition and motivation. *European Psychologist*, 1 (2), 100-112. <https://doi.org/10.1027/1016-9040.1.2.100>
- Boekaerts, M. (2006). Self-regulation and effort investment. In E. Sigel, & K. A. Renninger (Eds.), *Handbook of child psychology. Volume four: Child psychology in practice* (pp. 345-377). John Wiley & Sons.
- Boekaerts, M., & Niemivirta, M. (2000). Self-regulated learning: Finding a balance between learning goals and ego-protective goals. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 417-451). Academic Press. <https://doi.org/10.1016/b978-012109890-2/50042-1>
- Brandmo, C., Panadero, E., & Hopfenbeck, T. (2020). Bridging classroom assessment and self-regulated learning. *Assessment in Education*, 27 (4), 319-331. <https://doi.org/10.1080/0969594X.2020.1803589>
- Caena, F. (2019). *Developing a European framework for the personal, social & learning to learn key competence (LifEComp). Literature review & analysis of frameworks*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/172528>
- Caena, F., & Stringher, C. (2020). Towards a new conceptualization of learning to learn. *Aula Abierta*, 49 (3), 207-216. <https://doi.org/10.17811/rifie.49.3.2020.199-216>
- Cameron, R. B., & Rideout, C. A. (2020). «It's been a challenge finding new ways to learn»: First-year students' perceptions of adapting to learning in a university environment. *Studies in Higher Education*, 42 (11), 668-682. <https://doi.org/10.1080/03075079.2020.1783525>
- Cortina, A. (2013). *¿Para qué sirve realmente la ética? [What is ethics useful for?]*. Paidós.
- Council Recommendation of 22 May 2018 on key competences for lifelong learning. *Official Journal of the European Union*, C 189/1, of 4 June 2018. [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01))
- Deakin, R. (2007). Learning how to learn: The dynamic assessment of learning power. *The Curriculum Journal*, 18 (2), 135-153. <https://doi.org/10.1080/09585170701445947>
- Deakin, R., Haigney, D., Huang, S., Coburn, T., & Goldspink, Ch. (2013). Learning power in the workplace: The effective lifelong learning inventory and its reliability and validity and implications. *The International Journal of Human Resource Management*, 24 (11), 2255-2272. <https://doi.org/10.1080/09585192.2012.725075>
- DiStefano, C., Zhu, M., & Mindrila, D. (2009). Understanding and using factor scores: Considerations for the applied researcher. *Practical Assessment, Research, and Evaluation*, 14 (20). <https://doi.org/10.7275/da8t-4g52>
- Ehlers, U. D., & Kellermann, S. A. (2019). *The future skills report. International Delphi survey on the next skills project*. Baden-Wuerttemberg Cooperative State University.
- Ergen, B., & Kanadli, S. (2017). The effect of self-regulated learning strategies on academic achievement: A meta-analysis study. *Eurasian Journal of Educational Research*, 17 (69), 55-74. <https://ejer.com.tr/the-effect-of-self-regulated-learning-strategies-on-academic-achievement-a-meta-analysis-study/>
- European Political Strategy Centre. (2017). *10 trends transforming education as we know it. European Union*. <https://op.europa.eu/en/publication-detail/-/publication/227c6186-10d0-11ea-8c1f-01aa75ed71a1>

- Furtado, A., & Machado, A. M. (2016). Learning to learn the nursing consultation: Comprehensive analysis in the perspective of the student. *International Archives of Medicine*, 9 (388), 1-9. <https://doi.org/10.3823/2259>
- García-Bellido, R., Jornet, J., & González-Such, J. (2012). Una aproximación conceptual al diseño de instrumentos de evaluación de la competencia aprender a aprender en los profesionales de la educación [A conceptual approach for the design of instruments in education professionals for the evaluation of the competence learning to learn]. *Revista Iberoamericana de Evaluación Educativa*, 5 (1), 204-215. <https://revistas.uam.es/riece/article/view/4436>
- Gargallo-López, B., Almerich, G., Suárez-Rodríguez, J. M., & García-Félix, E. (2012). Estrategias de aprendizaje en estudiantes universitarios excelentes y medios. Su evolución a lo largo del primer año de carrera [Learning strategies in excellent and average university students. Their evolution over the first year of the career]. *Relieve*, 18 (2). <https://doi.org/10.7203/relieve.18.2.2000>
- Gargallo-López, B., Pérez-Pérez, C., García-García, F. J., Giménez, J. A., & Portillo, N. (2020). La competencia aprender a aprender en la universidad: propuesta de modelo teórico [The skill of learning to learn at university. Proposal for a theoretical model]. *Educación XX1*, 23 (1), 19-44. <https://doi.org/10.5944/educXX1.23367>
- Gargallo-López, B., Suárez-Rodríguez, J. M., Pérez-Pérez, C., Almerich, G., & García-García, F. J. (2021). El cuestionario CECAPEU. Un instrumento para evaluar la competencia aprender a aprender en estudiantes universitarios [The QELtLCUS questionnaire. An instrument for evaluating the learning to learn competence in university students]. *Relieve*, 27 (1). <https://doi.org/10.30827/relieve.v27i1.20760>
- González-Gascón, E. (2022). Learning to learn at the university. A marketing experience using the TAM. *Technology Science and Society Review*, 12 (3), 1-10. <https://doi.org/10.37467/revtechno.v11.4416>
- Grace, S., Innes, E., Patton, N., & Stockhausen, L. (2017). Ethical experiential learning in medical, nursing and allied health education: a narrative review. *Nurse Education Today*, 51, 23-33. <https://doi.org/10.1016/j.nedt.2016.12.024>
- Grasso, P. (2020). Rendimiento académico: un recorrido conceptual que aproxima a una definición unificada para el ámbito superior [Academic performance: A conceptual journey that approximates a unified definition for the higher level]. *Revista de Educación*, 11 (20), 87-102.
- Hadwin, A. F., Järvelä, S., & Miller, M. (2017). Self-regulation, co-regulation and shared regulation in collaborative learning environments. In D. H. Schunk, & J. A. Greene (Eds.), *Handbook of self-regulation of learning and performance* (2nd ed.) (pp. 83-106). Routledge / Taylor & Francis Group.
- Hadwin, A. F., & Oshige, M. (2011). Self-regulation, coregulation, and socially shared regulation: Exploring perspectives of social in self-regulated learning theory. *Teachers College Record*, 113 (2), 240-264.
- Hadwin, A. F., Wozney, L., & Pontin, O. (2005). Scaffolding the appropriation of self-regulatory activity: A socio-cultural analysis of changes in teacher-student discourse about a graduate student portfolio. *Instructional Science*, 33 (5-6), 413-450. <https://doi.org/10.1007/s11251-005-1274-7>
- Hautamäki, J., Arinen, P., Niemivirta, M. J., Eronen, S., Hautamäki, A., Kupiainen, S., Lindblom, B., Pakaslahti, L., Rantanen, P., & Scheinin, P. (2002). *Assessing learning-to-learn: a framework*. Opetushallitus.
- Hernández, F., Sales, P. J., & Cuesta, J. D. (2010). Impacto de un programa de autorregulación del aprendizaje en estudiantes de grado [A self-regulated learning intervention programme: Impact on university students]. *Revista de Educación*, 353, 571-588.
- Higgins, N. L., Rathner, J. A., & Frankland, S. (2021). Development of self-regulated learning: a longitudinal study on academic performance in undergraduate science. *Research in Science & Technological Education*. <https://doi.org/10.1080/02635143.2021.1997978>

- Hofer, B. K., & Yu, S. L. (2009). Teaching self-regulated learning through a «learning to learn» course. *Teaching of Psychology*, 30 (1), 30-33. https://doi.org/10.1207/S15328023TOP3001_05
- Hoskins, B., & Fredriksson, U. (2008). *Learning to learn: What is it and can it be measured?* European Commission, Joint Research Centre, Institute for the Protection and Security of the Citizen y Centre for Research on Lifelong Learning (CRELL).
- Hye-Jung, L., Lee, J., Makara, K. A., Fishman, B. J., & Teasley, S. D. (2017). A cross-cultural comparison of college students' learning strategies for academic achievement between South Korea and the USA. *Studies in Higher Education*, 42 (1), 169-183. <https://doi.org/10.1080/03075079.2015.1045473>
- Järvelä, S., & Hadwin, A. F. (2015). Promoting and researching adaptive regulation: New frontiers for CSCL research. *Computers in Human Behavior*, 52, 559-561. <https://doi.org/10.1016/j.chb.2015.05.006>
- Järvelä, S., Järvenoja, H., & Veermans, M. (2008). Understanding dynamics of motivation in socially shared learning. *International Journal of Educational Research*, 47 (2), 122-135. <https://doi.org/10.1016/j.ijer.2007.11.012>
- Johnson, D. W., & Johnson, R. T. (2017, September 22-23). *Cooperative learning* [Plenary presentation]. I Congreso Internacional de Innovación Educativa, Zaragoza, España. https://2017.congresoinnovacion.educa.aragon.es/documents/48/David_Johnson.pdf
- Jornet, J. J., García-Bellido, R., & González-Such, J. (2012). Evaluar la competencia aprender a aprender: una propuesta metodológica [Assessing the competence learning to learn: a methodological proposal]. *Profesorado. Revista de Currículum y Formación del Profesorado*, 16 (1), 103-123. <http://hdl.handle.net/10481/23009>
- Kass, M., & Faden, R. R. (2018). Ethics and learning health care: The essentials roles of engagement, transparency, and accountability. *Learning Health Systems*, 2 (4), 1-3. <https://doi.org/10.1002/lrh2.10066>
- Kosnin, A. M. (2007). Self-regulated learning and academic achievement in Malaysian undergraduates. *International Educational Journal*, 8 (1), 221-228.
- Lloret-Segura, S., Ferreres-Traver, A., Hernández-Baeza, A., & Tomás-Marco, I. (2014). El análisis factorial exploratorio de los ítems: una guía práctica, revisada y actualizada [Exploratory item factor analysis: A practical guide revised and updated]. *Anales de Psicología*, 30 (3), 1151-1169. <https://doi.org/10.6018/analesps.30.3.199361>
- Lluch, L., & Portillo, M. C. (2018). La competencia de aprender a aprender en el marco de la educación superior [Learning to learn in higher education]. *Revista Iberoamericana de Educación*, 78 (2), 59-76. <https://doi.org/10.35362/rie7823183>
- Lucieer, S. M., Jonker, L., Visscher, C., Rikers, R. M., & Themmen, A. P. (2016). Self-regulated learning and academic performance in medical education. *Medical Teacher*, 38 (6), 585-593. <https://doi.org/10.3109/0142159X.2015.1073240>
- Lugo, C. S. J., Hernández, G. R., Escoto, M. del C., & Montijo, E. L. (2016). Relación de los estilos y estrategias de aprendizaje con el rendimiento académico en estudiantes universitarios [Relationship of styles and learning strategies with the academic performance in university students]. *Revista de Estilos de Aprendizaje*, 9 (17), 268-288. <https://doi.org/10.55777/rea.v9i17.1054>
- Lynch, D. J. (2006). Motivational factors, learning strategies and resource management as predictors of course grades. *College Students Journal*, 40 (2), 423-427.
- Malnes, M., Vuksanović, N., & Simola M. (coords.). (2012). *Bologna with student eyes 2012*. European Students' Union ESU. <https://esu-online.org/wp-content/uploads/2016/07/BWSE2012-online1.pdf>
- Martín, E., & Moreno, A. (2007). *Competencia para aprender a aprender [Learning to learn competence]*. Alianza Editorial.
- McCaslin, M., & Hickey, D. T. (2001). Self-regulated learning and academic achievement: A Vygotskian view. In B. J. Zimmerman, & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 227-252). Lawrence Erlbaum Associates.
- McDonald, R. P. (1999). *Test theory: A unified treatment*. Psychology Press.

- McMillan, J. H., & Schumacher, S. (2010). *Research in education: Evidence-based inquiry* (7th ed.). Pearson.
- Meyer, D. K., & Turner, J. C. (2002) Using instructional discourse analysis to study the scaffolding of student self-regulation. *Educational Psychologist*, 37 (1), 17-25. https://doi.org/10.1207/S15326985EP3701_3
- Moreno, A., & Martín, E. (2014). The Spanish approach to learning to learn. In R. Deakin, C. Stringer, & K. Ren (Eds.), *Learning to learn* (pp. 196-213). Routledge.
- Morón-Monge, H., & García-Carmona, A. (2022). Developing prospective primary teachers' learning-to-learn competence through experimental activities. *International Journal of Science Education*, 44 (12), 2015-2034. <https://doi.org/10.1080/09500693.2022.2108929>
- Muñoz-San Roque, I., Martín-Alonso, J. F., Prieto-Navarro, L., & Urosa-Sanz, B. (2016). Autopercepción del nivel de desarrollo de la competencia de aprender a aprender en el contexto universitario: propuesta de un instrumento de evaluación [Self-perceived level of development of learning to learn competence in the university context: A proposed measuring instrument]. *Revista de Investigación Educativa*, 34 (2), 369-383. <https://doi.org/10.6018/rie.34.2.235881>
- Ning, H. K., & Downing, K. (2015). A latent profile analysis of university students' self-regulated learning strategies. *Studies in Higher Education*, 40 (7), 1328-1346. <https://doi.org/10.1080/03075079.2014.880832>
- Norton, L. S., & Crowley, C. M. (1995). Can students be helped to learn? An evaluation of an approach to learning programme for first year degree students. *Higher Education*, 29, 307-328. <https://doi.org/10.1007/BF01384496>
- OECD. (2018). *PISA Global Competence Framework*. OECD. <https://www.oecd.org/pisa/Handbook-PISA-2018-Global-Competence.pdf>
- OECD. (2019). *OECD Future of Education and Skills 2030. Conceptual Learning Framework. Learning Compass 2030*. <https://bit.ly/3ksvYDK>
- Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology*, 8 (422), 1-28. <https://doi.org/10.3389/fpsyg.2017.00422>
- Pérez-González, J. C., Filella, G., Soldevila, A., Faiad, Y., & Sánchez-Ruiz, M. J. (2022). Integrating self-regulated learning and individual differences in the prediction of university academic achievement across a three-year-long degree. *Metacognition and Learning*, 17 (3), 1141-1165. <https://doi.org/10.1007/s11409-022-09315-w>
- Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 452-502). Academic Press. <https://doi.org/10.1016/B978-012109890-2/50043-3>
- Pintrich, P. R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, 16 (4), 385-407. <https://doi.org/10.1007/s10648-004-0006-x>
- Piovano, S., Roisen, E., Fischer, C., Rodriguez, G., & Victorero, B. (2018). Estrategias de aprendizaje que utilizan los estudiantes de 1.º año de los departamentos de psicología y ciencias pedagógicas, administración y ciencias sociales y sistemas de una universidad privada [Learning strategies used by 1st year students of the departments of psychology and pedagogical sciences, administration and social sciences and systems of a private university]. *RAES: Revista Argentina de Educación Superior*, 10 (17), 98-114.
- Pirrie, A., & Thoutenhoofd, E. D. (2013). Learning to learn in the European Reference Framework for lifelong learning. *Oxford Review of Education*, 39 (5), 609-626. <https://doi.org/10.1080/03054985.2013.840280>
- Ramírez, J. J. (2017). *La competencia «aprender a aprender» en un contexto educativo de ingeniería [«Learn to learn» competence in an engineering educational context]* [Doctoral thesis]. TDX (Tesis Doctorals en Xarxa). <http://hdl.handle.net/10803/456383>
- Ray, M. W., & Garavalia, L. S. (2003, 21-25 de abril). *Gender differences in self-regulated learning, task value, and achievement in developmental college students* [Conference paper]. Annual Meeting of the American Educational Research Association, Chicago, EE. UU.

- Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning]. *Official Journal of the European Union*, L 394/10, of 30 December 2006. <https://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:394:0010:0018:en:PDF>
- Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling. *Journal of statistical software*, 48 (2), 1-36. <https://doi.org/10.18637/jss.v048.i02>
- Ryder, G., Rusell, P., Burton, M. Quinn, P., & Daly, S. (2017). Embedding peer support as a core learning skill in higher education. *Journal of Information Literacy*, 11 (1), 184-302. <https://arrow.tudublin.ie/ittsupart/10/>
- Säfström, C. A. (2018). Liveable life, educational theory and the imperative of constant change. *European Educational Research Journal*, 17 (5), 621-630. <https://doi.org/10.1177/1474904118784480>
- Sahranavard, S., Niri, M. R., & Salehiniya, H. (2018). The relationship between self-regulation and educational performance in students. *Journal of Education and Health Promotion*, 7, 154. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6332646/pdf/JEHP-7-154.pdf>
- Sala, A., Punie, Y., Garkov, V., & Cabrera Giraldez, M. (2020). *LifeComp: The European framework for personal, social and learning to learn key competence*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/302967>
- Schulz, M., & Stamov, C. (2010). Informal workplace learning: An exploration of age differences in learning competence. *Learning and Instruction*, 20 (5), 383-399. <https://doi.org/10.1016/j.learninstruc.2009.03.003>
- Stringer, C. (2014). What is learning to learn? A learning to learn process and output model. In R. Deakin, C. Stringer, & K. Ren (Eds.), *Learning to learn* (pp. 9-32). Routledge.
- Tejedor, F. J. (Coord.). (1998). *Los alumnos de la Universidad de Salamanca. Características y rendimiento académico [Students from the Salamanca University. Characteristics and academic achievement]*. Ediciones Universidad de Salamanca.
- Thoutenhoofd, E. D., & Pirrie, A. (2015). From self-regulation to learning to learn: Observations on the construction of self and learning. *British Educational Research Journal*, 41 (1), 72-84. <https://doi.org/10.1002/berj.3128>
- Treviño, L. (2016). *Estrategias de aprendizaje y rendimiento académico en estudiantes universitarios de Huancayo [Learning strategies and academic performance in college students from Huancayo]* [Master thesis]. Repositorio de la Universidad Nacional del Centro del Perú. <http://hdl.handle.net/20.500.12894/4485>
- Trilling, B., & Fadel, C. (2009). *21st century skills. Learning for life in our times*. Jossey-Bass.
- Viejo, C., & Ortega-Ruiz, R. (2018). Competencias para la investigación: el trabajo de fin de Máster y su potencialidad formativa [Competence for research: The master's thesis and its scientific training potentiality]. *Revista de Innovación y Buenas Prácticas Docentes*, 5, 46-56. <http://hdl.handle.net/10396/16951>
- Villardón-Gallego, L., Yáñez, C., Achurra, C., Iraurgi, I., & Aguilar, M. C. (2013). Learning competence in university: Development and structural validation of a scale to measure. *Psicodidáctica*, 18 (2), 357-374. <https://doi.org/10.1387/RevPsicodidact.6470>
- Virtanen, P., & Nevgi, A., (2010). Disciplinary and gender differences among higher education students in self-regulated learning strategies. *Educational Psychology*, 30 (3), 323-347.
- von Glasersfeld, E. (1989). Cognition, construction of knowledge, and teaching. *Synthese*, 80 (1), 121-140. <https://doi.org/10.1007/BF00869951>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Weinstein, C. E. (1987). *LASSI user's manual for those administering the learning and study strategies inventory*. H&H Publishing Company.
- Weinstein, C. E. (1988). Assessment and training of student learning strategies. In R. R. Schmeck (Ed.), *Learning strategies and learning styles* (pp. 291-316). Plenum Press.
- Weinstein, C. E., & Acee, T. W. (2018). Study and learning strategies. In R. F. Flipppo, & T. W. Bean (Eds.), *Handbook of college reading and study strategy research* (pp. 227-240). Routledge.

- Weinstein, C. E., Husman, J., & Dierking, D. (2000). Self-regulation interventions with a focus on learning strategies. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 727-747). Academic Press. <https://doi.org/10.1016/B978-012109890-2/50051-2>
- Weinstein, C. E., & Mayer, R. E. (1985). The teaching of learning strategies. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (pp. 315-327). MacMillan.
- Weinstein, C. E., Zimmerman, S. A., & Palmer, D. R. (1988). Assessing learning strategies: The design and development of the Lassi. In C. E. Weinstein, E. T. Goetz, & P. A. Alexander (Eds.), *Learning and study strategies* (pp. 25-40). Academic Press.
- Wibrowski, C. R., Matthews, W. K., & Kitsantas, A. (2017). The role of a skills learning support program on first-generation college students' self-regulation, motivation, and academic achievement: a longitudinal study. *Journal of College Student Retention: Research, Theory and Practice*, 19 (3), 317-332. <https://doi.org/10.1177/1521025116629152>
- Yan, Z., Chiu, M. M., & Ko, P. Y. (2020). Effects of self-assessment diaries on academic achievement, self-regulation, and motivation. *Assessment in Education: Principles, Policy and Practice*, 27 (5), 562-583. <https://doi.org/10.1080/0969594X.2020.1827221>
- Yániz, C., & Villardón-Gallego, L. (2015). Competencia para aprender [Competence to learn]. In L. Villardón-Gallego (Coord.), *Competencias genéricas en educación superior [Generic competencies in higher education]* (pp. 25-53). Narcea.
- Yip, M. C. W. (2019). The linkage among academic performance, learning strategies and self-efficacy of Japanese university students: A mixed-method approach. *Studies in Higher Education*, 46 (8), 1565-1577. <https://doi.org/10.1080/03075079.2019.1695111>
- Zhu, J., & Schumacher, D. J. (2016). Learning to learn and teaching to learn. *MedEdPublish*, 5, 63. <https://doi.org/10.15694/mep.2016.000063>
- Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81 (3), 329-339. <https://doi.org/10.1037/0022-0663.81.3.329>
- Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-39). Academic Press. <https://doi.org/10.1016/B978-012109890-2/50031-7>
- Zimmerman, B. J. (2013). From cognitive modeling to self-regulation: A social cognitive career path. *Educational Psychology*, 48 (3), 135-147. <https://doi.org/10.1080/00461520.2013.794676>
- Zimmerman, B. J., & Schunk, D. H. (2012). *Self-regulated learning and academic achievement. Theory, research, and practice*. Springer-Verlag.

Authors' biographies

Bernardo Gargallo-López is a Professor of Theory of Education at the Universidad de Valencia. First National Prize for Educational Research in 2000 and 2002. His current line of research and the competitive projects he has directed centre on teaching and learning in the university setting. He runs the GIPU-EA group.

 <https://orcid.org/0000-0002-2805-4129>

Gonzalo Almerich-Cerveró is an Associate Professor in the Department of Educational Research Methods at the Universidad de Valencia. His research centres on the integration of information and communication technology (ICT) in education, 21st-century competences, the learning processes of students, educational measurement, and educational research methodology.

 <https://orcid.org/0000-0002-8952-4104>

Fran-J. García-García is an Associate Professor in the Department of Theory of Education, Universidad de Valencia.

He won the Special Master's Prize in Special Education. His most recent works cover online learning, university pedagogy, and higher-education students' learning.



<https://orcid.org/0000-0002-6267-0080>

Inmaculada López-Francés has a doctorate in education from the Universidad de Valencia and is an Associate Professor. Licentiate Degree and Doctoral prizes from the Universidad de Valencia. Her lines of research include sexual, affective,

identity, and gender diversity and university pedagogy.



<https://orcid.org/0000-0003-1178-9054>

Piedad-M.^a Sahuquillo-Mateo has a doctorate in Education from the Universidad de Valencia and is an Associate Professor of Theory of Education. Her research interests centre on the family and the minor and on university pedagogy.



<https://orcid.org/0000-0002-8450-2475>

Sumario*

Table of Contents**

Estudios Studies

Kristján Kristjánsson

Phrónesis, metaemociones y educación del carácter
Phronesis, meta-emotions, and character education 437

**Bernardo Gargallo-López, Gonzalo Almerich-Cerveró,
Fran-J. García-García, Inmaculada López-Francés,
y Piedad-M.ª Sahuquillo-Mateo**

*Perfiles de estudiantes universitarios en la
competencia aprender a aprender y su relación con
el rendimiento académico*

*University student profiles in the learning to learn
competence and their relationship with academic
achievement* 457

**Gemma Fernández-Caminero, José-Luis Álvarez-
Castillo, Hugo González-González, y Luis
Espino-Díaz**

*Enseñando moralidad como competencia inclusiva
en educación superior: efectos de la discusión de
dilemas y contribución de la empatía*

*Teaching morality as an inclusive competence in higher
education: Effects of dilemma discussion and contribution
of empathy* 489

Jaime Vilarroig-Martín

*La pedagogía de Joaquín Xirau: entre la tradición
y la modernidad*

Joaquín Xirau's pedagogy: Between tradition and modernity 511

Notas Notes

Ana Romero-Iribas, y Celia Camilli-Trujillo

*Diseño y validación de una Escala de Amistad
de Carácter para jóvenes*

*Design and validation of a Character Friendship Scale
for young adults* 529

**Begoña García-Domingo, Jesús-M. Rodríguez-Mantilla,
y Angélica Martínez-Zarzuelo**

*Instrumento para valorar el impacto del sistema
de acreditación en educación superior: validación
mediante análisis factorial exploratorio*

*An instrument to evaluate the impact of the higher education
accreditation system: Validation through exploratory factor
analysis* 555

**Judit Ruiz-Lázaro, Coral González-Barbera, y José-Luis
Gaviria-Soto**

*La prueba de Historia de España para acceder
a la universidad: análisis y comparación entre
comunidades autónomas*

*The Spanish History test for university entry: Analysis and
comparison among autonomous regions* 579

**Juan-F. Luesia, Juan-F. Plaza, Isabel Benítez, y Milagrosa
Sánchez-Martín**

*Desarrollo y validación del Test de Competencia
Ortográfica (TCORT) en estudiantes universitarios
de nuevo ingreso*

*Development and validation of the Test of Spelling Competence
(TCORT) in incoming university students* 601

* Todos los artículos están también publicados en inglés en la página web de la revista: <https://revistadepedagogia.org/en>.

** All the articles are also published in English on the web page of the journal: <https://revistadepedagogia.org/en>.

Reseñas bibliográficas

Abad, M. J. (Coord.) (2022). *Empantallados. Cómo educar con éxito a tus hijos en un mundo lleno de pantallas* (Ezequiel Delgado-Martín). **Nasarre, E. (Ed.) (2022).** *Por una educación humanista. Un desafío contemporáneo* (Clara Ramírez-Torres). **Santos-Rego, M. A., Lorenzo-Moledo, M., y García-Álvarez, J. (Eds.) (2023).** *La educación en red. Una perspectiva multidimensional* (Marisol Galdames-Calderón). 637

Ignacio Quintanilla Navarro. In memoriam
Ignacio Quintanilla Navarro. In memoriam 649

Índice del año 2023
Table of contents of the year 2023 653

Instrucciones para los autores
Instructions for authors 659

Información para lectores y suscriptores
Notice to readers and subscribers 663



ISSN: 0034-9461 (Impreso), 2174-0909 (Online)

<https://revistadepedagogia.org/>

Depósito legal: M. 6.020 - 1958

INDUSTRIA GRÁFICA ANZOS, S.L. Fuenlabrada - Madrid