TOWARDS DIGITAL COMPETENCE FROM THE CONCEPTION OF STUDENTS IN LANGUAGE INSTRUCTION. A STUDY WITHIN THE MASTER'S DEGREE IN TEACHING IN ANDALUSIA

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Abstract

The use of smart mobile devices and the integration of social networks into the educational setting is a reality that has been widely studied by the research community. Their integration into the educational environment has increased following the declaration of the COVID-19 pandemic. In light of the need to explore the conceptions of future educators regarding the integration of these technologies in the classroom after having experienced a health crisis, this study aims to describe the basic components of the conceptions of teacher trainees with regard to the usefulness of smartphones and social media in language teaching in the master's degree in teaching. During the 2022-2023 academic year, a total of 139 registered students in the Spanish language and literature and foreign languages specialties as part of the master's degree in teaching in the Andalusian Unified District (*Distrito Único Andaluz, DUA*) participated in this study. The respondents completed the Usefulness of the Social Media and Smartphones for Educational Action questionnaire (known as the CURSAE, according to its Spanish initials). The results show a trend toward positively viewing the use of smartphones and the social media in the classroom and as an element to establish communication with the various educational agents. The gender variable showed no statistically significant differences, as opposed to age and the specialization studied, which did reveal such differences. The use of these technologies was more widely accepted by younger students and those specializing in Spanish language and literature. These results are extremely useful for improving the initial training of secondary education and baccalaureate teachers.

Keywords – Social media, Smart mobile devices, Initial training, Master's degree in teaching.

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1. Introduction

In 2020, the world was immersed in a pandemic caused by COVID-19. A health crisis was unleashed that had never before been seen in the 21st century. The population was faced by a quarantine that required families to juggle remote working and cooperation with remote education, increasing the use of mobile

devices to support the completion of school-related tasks and to communicate with their children's teachers. This critical situation prompted studies to be carried out in various disciplines, including medical (Balibrea, Badia, Pérez, Antona, Peña, Botella et al., 2020), socioeconomic (Bacigalupe, Martín, Franco & Borrell, 2022), psychological (Sandín, Valiente, García-Escalera & Chorot, 2020) and linguistic (Ávila, Santos & Trigo, 2020; 2022) fields.

Among the negative consequences of the COVID-19 pandemic, we find those which occurred in the classroom. Students exchanged their classroom desks for their tables at home and a chalkboard for a computer screen. Technologies took on a crucial role in the teaching and learning process at every level of education. This reality came to create a digital divide between students who had technological means and those who did not (Trigo, Jarpa & Maraver, 2022), a matter that had gradually been becoming evident for years (Astudillo, Chévez & Oviedo, 2019; Consejo de la Unión Europea, 2016).

The COVID-19 pandemic thus revealed the difficulties that teachers, students and families had to perform certain tasks in a satisfactory manner (Fernández-Sánchez, Pérez-Vera & Sánchez-Herrera, 2021; Romero, Heredia, Jiménez & Gutiérrez, 2022). However, this situation has resulted in new training needs by teaching staffs, students, their families, and in effect, the entire educational system (Santa-Cruz, Chávez, Domínguez, Castañeda & Arauj, 2022).

Studies conducted during and after the crisis generated by the COVID-19 virus show that teachers felt like they did not receive enough instructions from the educational administrations (Trigo et al., 2022). While it is true that most of the teachers acknowledge that they know how to use ICT, a large percentage state that they did not have the strategies to adapt them to the educational setting, as it has been an enormously complex task to give classes, provide feedback, etc. (Ferrada-Bustamante, González-Oro, Ibarra-Caroca, Ried-Donaire, Vergara-Correa & Castillo-Retamal, 2021).

In Spain, for example, teachers had to meet the demands of an extensive and broad curriculum that was not adapted to the needs of the current situation; the shortcomings of the educational centers became visible, as the vast majority had no educational platforms or virtual classrooms (Area, Santana & Sanabria, 2020); the students and their families were also discovered to have technological, curricular and language-related deficits that prevented them from participating in online education. Merely having a technological device at home with an Internet connection was no guarantee of following online education; as Cabero, Valencia, Llorente and Palacios (2023) point out, digital literacy does not concern merely operating the technological tools, it also requires thinking and problem solving in a digital society.

This idea is emphasized by the so-called "techno-educators" with regard to the concept of learning ecology, which Barron (2006) defines as "the set of contexts found in physical or virtual spaces that provide opportunities for learning (Barron, 2004). Each context is comprised of a unique configuration of activities, material resources, relationships, and the interactions that emerge from them" (page 198). In this way, learning about technology occurs outside school (in informal or non-formal settings that are both online and analog) and it is necessary to integrate it into the school; meanwhile, schools show an important deficit in significant learning in terms of technology.

In accordance with this, many families and students at every educational level showed deficiencies in the technological material necessary to carry out the tasks proposed by the different educational institutions (Hernández & Álvarez, 2021). In this sense, the family context in which the student lives takes on a relevant role. In fact, those students who do not have a computer, a good Internet connection and who live in impoverished social and economic environments may experience increased inequality (Domínguez, Cisneros, Ortega & Ortega, 2022).

Several direct relationships can thus be established. One of them is that which occurs between the purchasing power of the family unit and the availability of electronic devices. Along these lines, the lower a household's per capita income is, the greater the lack of electronic devices in the home (Vivanco, 2020). Another established relationship is that the lower the level of education of the parents, the greater are the

curricular shortcomings demonstrated by the students. And finally, the better the skills and participation of the teaching staff are in creating digital environments that allow for the pursuit of remote learning, the greater the education of the learners (Cabrera, Pérez & Santana, 2020).

It is precisely this idea that triggered the implementation of different educational plans. For example, in the Autonomous community of Andalusia, the Educational Digital Transformation plan has been being implemented for several years now, intended to improve and update the processes, procedures, habits and behaviors of educational institutions and the people who, using digital technologies, develop their capacity to face the challenges of today's society (Junta de Andalucía, n.d.). Plans like this one we present as an example have made it possible to gradually generate new educational modes, in which digital platforms and resources play a leading role (Jutaite, Janiunaite & Horbacauskiene, 2021). In this manner, blended learning has little by little gained a foothold (Juca-Maldonado, Carrión & Juca-Abril, 2020), along with mobile-learning, elu-learning (Rodríguez-Núñez, Vallejo, Proaño, Romero-Rojas, Solís & Erazo, 2017) and e-learning (Ramírez-Hernández, 2021).

But is the teaching staff really ready to face instruction using Learning and Knowledge Technologies (hereinafter, LKT)? It would seem not, since even though numerous studies have shared hopeful experiences for the use of LKT in the classroom, from both the perspectives of initial training (Álvarez-Ramos & Romero, 2018; Castillo-Rodríguez, Santos-Díaz & Díaz-Lague, 2022; Torralba, 2018, among others) and the practice of teaching (Barrientos, Pérez-García & Caldevilla, 2021; Calvo, 2018; Hernández-Ortega, Sánchez & Rovira-Collado, 2021; Labio-Bernal, Romero-Domínguez, García-Orta & García-Prieto, 2020; Porto, 2022, among others), Bañares and Rayón (2019), based on a bibliographic review, detect a need to continue to train educators through strategies that are aimed at technological literacy, competence development and building digital knowledge.

Furthermore, the problem of the digital training of educators has been a subject of study for years now. The scarce training of university educators in implementing digital environments in their classes has become evident (Marín, Vázquez, Llorente & Cabero, 2012), as has their reticence to use technology (García-Umaña, Ulloa & Córdoba-Pillajo, 2020) and the lack of preparation to use the tools students demand (Arancibia, Cabero & Marín, 2020). Within the framework for initial training, there are also studies that evidence the lack of mastery of digital tools in order to work on aspects like reading in the classroom (Trigo & Santos-Díaz, 2023).

Focusing on secondary education, we find a serious problem with integrating ICT and LKT in the classroom (Díaz-Rosabal, Díaz-Vidal, Vázquez, Sánchez-Martínez, Riverón-Rodríguez & Santiesteban-Reyes, 2020). While it is true that there is wide consensus indicating that smart mobile devices (hereinafter, SMD) and social media sites (hereinafter, SMS) may be an ally in education (Gutiérrez-Ortega, García-Tamarit & Fandos-Igado, 2020; Lena-Acebo, Pérez-Escoda, García-Ruiz & Fandos-Igado, 2023; Salas, 2023), the low level of digital literacy on the part of the teaching staff and their reluctance to use digital resources such as social media, software, etc. (Álvarez & Gisbert-Cervera, 2015), as well as the lack of transmedia competences exhibited by adolescents (Cabero et al., 2023; Gutiérrez, Rey & Melo, 2018) and their families (Urías, Urías & Valdés, 2017; Vargas, 2023) all continue to pose a threat to their use.

In agreement with the above, and taking into account the growing importance of the Internet in our lives from very early on (Pérez-Escoda, 2018), previous studies on an international level have analyzed the perception of educators regarding the educational value that SMD and SMS have taken on as resources for educational transformation (Asterhan & Bouton, 2017; Thomas, O'Bannon & Bolton, 2013, among others). In the Spanish setting, research by Gutiérrez-Ortega et al. (2020) and Lena-Acevo et al. (2023) are worthy of note.

In this regard, Gutiérrez-Ortega et al. (2020) evidence that the beliefs of educators clearly influence the perception and use of SMD and SMS in the classroom. They have conducted a study with 2659 Spanish non-university educators, with ages between 31 and 50. The results reveal that there is a difference

between the perceptions and beliefs of primary school and secondary school teachers with regard to the use of ICT and LKT. It is pointed out that secondary school teachers are the group recording the lowest level of presence on the social media and who have fewer resources on a personal level. This generates the perception of less utility for the educational and professional activity at this educational level as compared to Early Childhood and Primary Education, which the authors attribute to the fear of disruptive situations in the classroom. Something similar occurs with age, as educators over age 40 are also those least present on the social networks and are thus the most reticent in considering the use of SMD and SMS, which evidences a clear training need on the part of this group. With regard to gender, while women demonstrate a greater presence on the social networks, they are also more reticent to use them in an educational setting, which points toward greater prudence on the part of women as opposed to men.

The study by Lena-Acevo et al. (2023), in turn, included the participation of 2048 Spanish instructors from all educational levels, from Early Childhood Education to Higher Education. The study was carried out following the COVID-19 pandemic, a time when the use of SMD and SMS had supposedly increased in the educational context. The results of this work confirm that while there has been an increase in their use, there is a need for teacher training on the use of SMD and SMS in the educational setting. Furthermore, reticence towards their use is still detected by 50% of the secondary education group and 50% of the Higher Education group, as they consider SMD as an addictive tool and one that might support cyberbullying. This concern is also evident in the study by Cívico, Cuevas, Colomo and Gabarda (2021), in which it is shown that families fear the addictive component that might be generated by the increased use of mobile devices during the pandemic.

As is evident, in Spain, the panorama of research exploring beliefs regarding the use of SMD and SMS in the educational setting has been carried out exclusively using active educators in the different educational stages as a reference. However, we know of no studies focused on exploring the beliefs of future secondary school teachers that have been carried out following the COVID-19 pandemic.

We do, however, have the precedent in an international context of the study by Yildiz (2018), which was conducted prior to the pandemic. This study determined that the acceptance of SMS for educational purposes was affected by the social effect, the performance expectation and the effort expectation, respectively, and the intention to use these technologies in the classroom was influenced by the real use on the part of the teachers in training.

In agreement with this, we believe that the voice of future educators may shed certain light on the use of SMD and SMS in education, especially in a context in which the use of these technologies has been noticeably on the increase. The results would help turn our attention towards the possible deficits detected and thus improve the initial training currently offered by the *University Master's Degree in Teacher Training in Compulsory Secondary Education, Baccalaureate Studies, Professional Training and Language Teaching*. In addition, the contrast with research conducted on educators could help us establish points of convergence in order to take action in both the educational setting and at the university, creating bridges of cooperation between the two institutions.

In this sense, after analyzing the status of the matter, we ask ourselves how students in their initial training conceive of the active methodologies in general, and more specifically, of the devices, from the perspective of their connectivity and interaction in order to teach languages and literature. Here arises a series of research questions (RQ) that become the objective of this study:

- RQ1: Are there any differences in the conceptions regarding the use of devices according to the sociodemographic variables (gender, age, university of studies)?

- RQ2: Is there a different conception with regard to the devices and social media in the future professional performance between the students in their initial training, according to their studies and specialty in Spanish language and literature or foreign language?

2. Methodology

This research corresponds to a descriptive quantitative and correlational study with the aim of describing the basic components of the conceptions of future educators regarding the usefulness of smartphones and social media in the teaching of languages in the master's degree in teaching in the Andalusian Unified School District (DUA). Data were obtained from the application and adaptation of an existing instrument, the CURSAE (Usefulness of the Social Media and Smartphones for Educational Action), the reliability and validity of which has been demonstrated (Fandos-Igado, García-Tamarit, Navarro-Asencio & Gutiérrez-Ortega, 2021). The instrument was adapted to an online version, and the informed consent and the ethical research requirements appeared in it.

2.1. Sample

This research has been conducted in the context of the *University Master's Degree for Training Teachers in Compulsory Secondary Education, Baccalaureate Studies, Professional Training and Language Teaching* at different Andalusian universities in Almería, Cádiz, Córdoba, Granada (including the Granada, Melilla and Ceuta campuses), Huelva, Jaén and Pablo de Olavide, within the framework of initial training in the teaching of languages, in both the specialties of Spanish language and literature (SLL), and foreign languages (FL). A convenience sampling was carried out focused on a non-probabilistic, non-random technique for reasons of ease of access and the possibility of response by the informants who made up the study sample. In our case, the number of responses was 139 (n), from a total universe of 643 students (N), which represents a study population of 21.61%. The distribution of responses is shown in Table 1:

Abbreviations	Universities	N	n	M	F	PD SLL	RD SLL	PD FL	RD FL
UAL	University of Almería	65	12	3	9	6	0	6	0
UCA	University of Cádiz	44	38	9	29	19	0	17	2
UCO	University of Córdoba	44	9	3	6	2	1	5	1
UGR	University of Granada	160	22	6	16	10	1	9	2
UHU	University of Huelva	45	5	1	4	4	0	1	0
UJA	University of Jaén	47	6	1	5	4	1	1	0
UMA	University of Málaga	90	36	12	24	26	0	4	6
UPO	University of Pablo de Olavide	77	10	3	7	4	0	2	4
USE	University of Seville	71	1	0	1	0	1	0	0
Total		643	139	38	101	75	4	45	15
		100%	21.6	27.3	72.7	54	2.8	32.4	10.8

Table 1. Distribution of the sample

The description of the study sample (n=139), shaded in Table 1, is distributed according to the variable of gender –male (27.3%) as opposed to female (72.7%)–, in which the age ranges were from 21-30 years, accounting for 82% (114 students); 31-40 years, with 16.5% (23 respondents); and 41-50 years, with 1.5% (2 respondents). With regard to the studies leading to the master's degree, they are grouped into a block of preferred degrees (PD) and another block of related degrees (RD), according to the specialty in language teaching, at the discretion of the Andalusian Unified School District (DUA). The distribution, according to both the SLL specialty and FL specialty, evidences a predominance of access to the master's from preferred studies (PDF, with a total of 86.4%) –Spanish philology, linguistics or literature theory, in SLL (SLLPD, with 54%); and philology and studies related to foreign languages, in FL (FLPD, with 32.4%)–, as opposed to related studies (RD, with a total of 13.6%) –journalism (SLLRD, with 2.8%) and translation and interpretation (FLRD, with 10.8%).

2.2. Hypotheses

With regard to the research questions, we proposed a series of hypotheses that we will corroborate in the results:

H_1: *Significant differences exist between the X dimension (D1, D2, D3, D4) and gender.*

H_2: *Significant differences exist between the X dimension (D1, D2, D3, D4) and the different specialties in language teaching.*

H_3: *Significant differences exist between the X dimension (D1, D2, D3, D4) and the degree leading to the master's.*

H_4: *Significant differences exist between the X dimension (D1, D2, D3, D4) and the age ranges.*

H_5: *Significant differences exist between the X dimension (D1, D2, D3, D4) and the universities of study.*

2.3. Instrument

The questionnaire, structured into 28 items (Fandos-Igado et al., 2021), was adapted to the needs of the study with the intention of describing the perceived usefulness of SMD and SMS in the conceptions of the future performance as language teachers. On the one hand, 6 items were used linked to the profile of the respondent him/herself, using predictive sociodemographic variables –gender, age, studies leading to the master's and university where the master's degree is being studied. Items on the availability of means and access to technology were ruled out in this study to focus the research on the 14 items that corresponded to how the students perceive the social media and smartphones in language teaching, with regard to communication with students and their families or actual classroom teaching.

The 14 items were distributed into four dimensions, as shown in Table 2, in order to analyze the calculated variables and to determine their effect on the predictive variables.

The item design used a four-option Likert scale to prevent responses with a central tendency, on which the respondents needed to select from among the following values: 1 = totally disagree, 2 = partially disagree, 3 = partially agree and 4 = totally agree. In this manner, the equality in the design of the questions made it possible to assess and delimit the standardized scores for each dimension (Table 2), with the intent of classifying them into three levels (low, medium and high) and to establish scales based on the direct scores of the responses from the sample groups, according to the study dimensions and gender variables, specialty and geographic distribution (Table 3).

Dimensions	Items
1. Use of devices and interaction with educational agents (D1)	1,2,3
2. Use of the social media and professional performance (D2)	4,5,6
3. Social media and language teaching (D3)	7,8,9
4. Forecast and limitations regarding the social media (D4)	10, 11,12,13,14

Table 2. Relationship between the dimensions and the items

Dimensions	Minimum	Maximum	Range	Levels		
				Low	Medium	High
D1	3	12	9	[3-6]	[7-9]	[10-12]
D2	3	12	9	[3-6]	[7-9]	[10-12]
D3	3	12	9	[3-6]	[7-9]	[10-12]
D4	5	20	15	[5-8]	[9-17]	[18-20]

Table 3. Assessment of the dimensions

2.4. Research Design

This quantitative research uses the CURSAE questionnaire (Fandos-Igado et al., 2021) as a reference. Based on the scale used in this instrument, predictive sociodemographic variables were established with regard to the four dimensions for the analysis of the correlations calculated as specified in the flow chart in Figure 1.

The analysis of the data from the different statistical tests was carried out with the SPSS software (v.29.00.00).
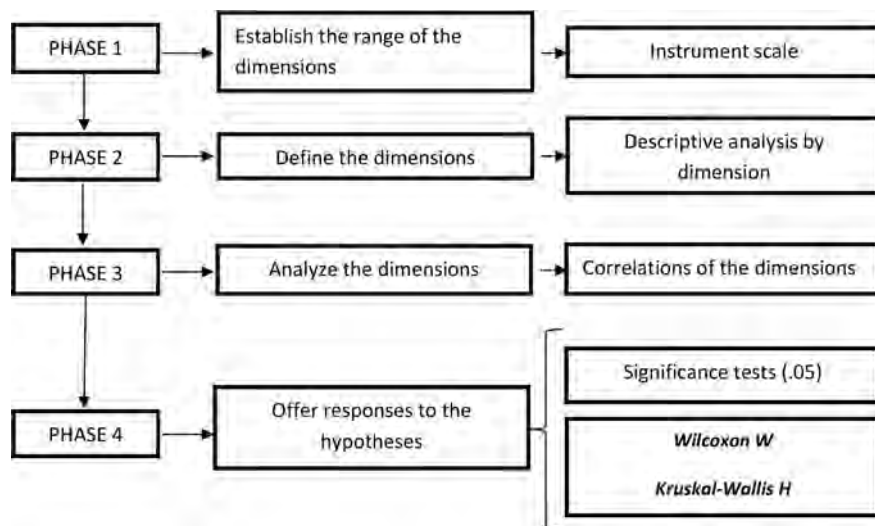

Figure 1. Research procedure

3. Results

The results were obtained according to the phases established in the research design (Figure 1).

3.1. Phase 1: Scale and Ranges

The scale of the questionnaire will aid us in establishing ranges for evaluating the different dimensions (Table 3) and to ensure that all the aspects analyzed will be standardized by means of an evaluation within the set as opposed to individually. Table 4 shows how the distribution of the responses of the dimensions D2 (40.3%) and D3 (43.2%) show a similar trend in the distribution of the levels with the highest percentage of medium level, but with values close to the low and high values. Dimension D4 (94.3%) is also located at the medium level, although in this case, the other levels show residual data of around 3%. However, dimension D1 exhibits a different behavior, as there is a distribution very close to the low (37.5%) and high (37.4%) levels, with a minimal difference between them of 0.1% and a medium level with 25.1%.

Levels	D1	D2	D3	D4
Low	37.5%	25.90%	26.60%	2.80%
Medium	25.1%	40.30%	43.20%	94.30%
High	37.4%	33.80%	30.20%	2.80%

Table 4. Distribution of the sample by dimension, according to the scale

3.2. Phase 2: Define the Dimensions

The descriptive study (Table 5) offers us a higher score for dimension D4, with a mean of 13.20, in other words, it would be in the medium level according to the scale used. Furthermore, this measure may be due to the fact that the items are linked to the development of how they would be used to practice them in

language teaching, as opposed to dimension D1, which is 7.91, and on the limit of the medium level. This is due to the fact that the questions are related to the use of the social media in general, without focusing on their specialties.

Dimensions	*n*	*m ± sd*
D1	139	7.91± 3.207
D2	139	8.52± 2.666
D3	139	8.36± 2.681
D4	139	13.20± 2.011

Table 5. Descriptive analysis of the dimensions. m: mean; sd: standard deviation

3.3. Phase 3: Analysis of the Dimensions

According to the phases of analysis in a research study, we analyze whether there are any correlations among the dimensions that we have established (Table 6).

Table 6 shows that all the dimensions are related to one another, and all the dimensions have a significance of 99% ($p > 0.01$), except between dimensions D1 and D2, in which it is 95% ($p < 0.05$). In addition, in all the cases when a dimension increases it score, the others do too; i.e., they are directly proportionate. On the other hand, we can see that the highest correlation (0.818) occurs between dimensions D2 and D3, and the lowest (0.168) on the list is between dimensions D4 and D1.

Dimensions	1	2	3	4
1				
2	.395			
3	.419	.818		
4	.168	.326	.294	

Table 6. Correlations among the dimensions

3.4. Phase 4: Calculated Variables versus Predictive Variables

Once these correlations have been established, we will extract whether there is any significance between the calculated variables (the 4 dimensions) and the predictive variables or strata (gender, age, specialty, preliminary studies and university).

With regard to gender (Table 7), we find both that there are and are not significant differences between the dimensions, and therefore we reject the alternative hypothesis (Differences do exist between dimensions X (D1, D2, D3, D4) and gender) and we accept the null hypothesis (No differences exist between dimensions X (D1, D2, D3, D4) and gender). Even so, we can see that dimension D1 has a greater means for men, while the opposite occurs in the rest: women have a higher mean, although in D2 and D4, these differences are minimal.

With regard to specialty (Table 8), there is a 95% significant difference in D1, and therefore, we accept the alternative hypothesis that there are differences between dimension D1 and the specialty in favor of SLL students. Even though these significant differences do not occur in the other dimensions, they follow the same trend, since the means in SLL are higher than in the others, albeit with a smaller difference of 0.5.

Furthermore, with regard to the studies completed leading to the master's degree (Table 9), we observe the same trend as with the specialty, as we have accepted the alternative hypothesis (Differences exist between the dimensions X (D1) and the degrees leading to the master's degree), as there are significant differences of 95% in D1 in favor of the SLLPD. The same thing occurs in the remaining dimensions, with SLLPD standing out from the rest, except for in D4, in which it is the SLLRD group. It is true, however, that the differences between the rest are minimal.

Dimensions	Gender	Mean range	$m \pm sd$	Wilcoxon W	p
D1	Male	71.79	8.05± 3.312	7002.00	.738
	Female	69.33	7.86± 3.181		
D2	Male	69.03	8.42± 2.543	2623.00	.859
	Female	70.37	8.55± 2.722		
D3	Male	64.24	7.92± 2.705	2441.00	.294
	Female	72.17	8.52± 2.667		
D4	Male	66.33	13.00± 2.080	2520.50	.496
	Female	71.38	13.28± 1.991		

Table 7. Analysis of the dimensions according to the predictive variable "gender"

Dimensions	Specialty	Mean range	$m \pm sd$	Wilcoxon W	p
D1	SLL	77.48	8.53± 3.075	3609.00	.011*
	FL	60.15	7.10± 3.219		
D2	SLL	74.67	8.80± 2.700	3831.00	.112
	FL	63.85	8.15± 2.596		
D3	SLL	72.37	8.52± 2.750	4013.00	.420
	FL	66.88	8.15± 2.596		
D4	SLL	72.42	13.28± 2.031	4008.50	.401
	FL	66.81	13.10± 1.997		

*Level of significance: 0.05

Table 8. Analysis of the dimensions according to the predictive variable "specialty"

Dimensions	Degree	Mean range	$m \pm sd$	Kruskal-Wallis H	p
D1	SLLPD	78.41	8.60± 3.071	8.400	.038*
	SLLRD	60.00	7.25± 3.304		
	FLPD	63.29	7.42± 2.966		
	FLRD	50.73	6.13± 3.833		
D2	SLLPD	75.11	8.83± 2.763	2.774	.428
	SLLRD	66.38	8.25± 0.957		
	FLPD	63.12	8.11± 2.560		
	FLRD	66.03	8.27± 2.789		
D3	SLLPD	72.65	8.55± 2.815	.745	.863
	SLLRD	67.13	8.00± 0.816		
	FLPD	67.31	8.18± 2.480		
	FLRD	65.60	8.07± 3.011		
D4	SLLPD	72.18	13.27± 2.069	4.945	.176
	SLLRD	77.00	13.50± 1.291		
	FLPD	72.76	13.38± 2.037		
	FLRD	48.97	12.27± 1.668		

*Level of significance: 0.05

Table 9. Analysis of the dimensions according to the predictive variable "studies leading to the master's"

In the age range analysis (Table 10), we accept the alternative hypothesis (Differences exist between the X dimensions (D3) and the age ranges) in D3, where the students between 21 and 30 years of age have a higher mean than the rest. In the other dimensions, even though there are no significant differences, the same situation occurs, as the students between ages 21 and 30 have a higher mean than the rest. It is interesting to note that in D2 and D3, the mean reaches 6 in both cases.

Dimensions	Age range	Mean range	$m \pm sd$	Kruskal-Wallis H	p
D1	21-30 years old	71.89	8.04± 3.273	1.440	.487
	31-40 years old	61.50	7.30± 2.991		
	41-50 years old	59.75	7.50± 0.707		
	51-65 years old	0.00			
D2	21-30 years old	71.36	8.60± 2.840	2.555	.279
	31-40 years old	66.98	8.35± 1.584		
	41-50 years old	27.50	6.00± 0.00		
	51-65 years old	0.00			
D3	21-30 years old	74.14	8.61± 2.783	7.664	.022*
	31-40 years old	53.17	7.30± 1.820		
	41-50 years old	27.50	6.00± 0.00		
	51-65 years old	0.00			
D4	21-30 years old	72.57	13.30± 2.116	3.843	.146
	31-40 years old	60.72	12.91± 1.203		
	41-50 years old	30.50	11.00± 2.011		
	51-65 years old	0.00			

*Level of significance: 0.05

Table 10. Analysis of the dimensions according to the predictive variable "age range"

With regard to gender (Table 7), we find both that there are and are not significant differences between the dimensions, and therefore we reject the alternative hypothesis (Differences do exist between dimensions X (D1, D2, D3, D4) and gender) and we accept the null hypothesis (No differences exist between dimensions X (D1, D2, D3, D4) and gender). Even so, we can see that dimension D1 has a greater means for men, while the opposite occurs in the rest: women have a higher mean, although in D2 and D4, these differences are minimal.

Dimensions	Universities	Mean range	$m \pm sd$	Kruskal-Wallis H	p
D1	Almería	60.25	8.17± 2.949	10.801	.029
	Cádiz	56.63	7.76± 2.842		
	Granada	73.05	9.18± 3.487		
	Pablo de Olavide	31.70	5.10± 2.846		
	Málaga	61.72	8.06± 3.617		
D2	Almería	64.33	9.08± 2.503	13.384	.010
	Cádiz	44.74	7.47± 2.251		
	Granada	59.52	8.68± 2.901		
	Pablo de Olavide	79.65	10.30± 2.214		
	Málaga	67.86	9.28± 2.773		
D3	Almería	63.33	8.75± 2.927	7.089	.131
	Cádiz	47.75	7.50± 2.089		
	Granada	62.84	8.82± 2.822		
	Pablo de Olavide	67.60	9.20± 2.658		
	Málaga	66.33	9.03± 2.962		
D4	Almería	56.88	12.75± 2.006	6.312	.177
	Cádiz	61.84	13.34± 2.643		
	Granada	58.64	13.23± 2.092		
	Pablo de Olavide	36.05	11.80± 1.874		
	Málaga	64.94	13.39± 0.964		

Table 11. Analysis of the dimensions according to the predictive variable "university"

And finally, we analyze the university where the respondents studied the Master's degree in Secondary Education (Table 11). Here we merely made a selection, taking into account the degree of freedom and a sufficient number of observations, so that we ended up considering responses from Almería, Cádiz, Granada, Pablo de Olavide and Málaga. No significant differences are observed, and therefore we reject the alternative hypothesis (Differences do exist between dimensions X (D1, D2, D3, D4) and the universities of study) and we accept the null hypothesis (No differences exist between dimensions X (D1, D2, D3, D4) and universities of study). But if we focus on their means, we see that in D1, the University of Granada stands out from the rest; in D2 and D3, it is the University Pablo de Olavide; and in the last dimension, it is the University of Málaga that is above the rest, but with barely any difference from them (0.05 higher than the University of Cádiz).

4. Conclusions

The aim of this study was to determine whether there were any differences in the conceptions of the use of SMD and SMS in the area of initial training of language and literature teachers, specifically, in the stages of secondary education and baccalaureate, where our respondents will engage in their professional careers in the future. To this end, the variables gender, age and university of study were used as a reference.

A preliminary descriptive approach shows that, generally speaking, future secondary education and baccalaureate teachers seem to be receptive to the use of SMD and SMS in education, especially when they are to be used specifically for language teaching. These results coincide with those of Yildiz (2018) and are also similar to the findings of Gutiérrez-Ortega et al. (2020), Lena-Acebo et al. (2023) and Salas (2023), conducted on active educators at all educational levels, who viewed SMD and SMS to be allies in the classroom.

In our study, the gender variable failed to provide any statistically significant differences, as the men only showed a slight advantage of women in terms of their acceptance to use mobile devices to establish communication with different educational agents (mean range of 70.92 as opposed to 68.28 for women), and the women exhibited higher values than men with regard to their conception of the use of social media in language teaching (70.95 as opposed to 63.73). These results coincide with previous research conducted with educators actively working in the field (Gutiérrez-Ortega et al., 2020; Lena-Acebo et al., 2023). However, the same does not occur with the age variable, which in previous studies did not present any significant differences, but in this study shows an inversely proportional relationship. That is to say, the younger the respondent, the greater acceptance is shown regarding the use of SMD and SMS at school. Accordingly, the 21-30 age group shows the highest values in every dimension. These results coincide with the findings by López de Ayala, Vizcaíno and Montes (2020), and thus there appears to be a greater trend among young people not only to consume social media and to integrate smartphones into their everyday lives, but also to analyze the benefits of the use of these technologies in the classroom. It would seem that the future generations of educations will contribute to the increased use of SMD and SMS in education, making them the perfect allies in the teaching and learning processes. This approach, from a new educational and instructional perspective, will contribute to changing the vision detected in previous studies, such as that by Cívico et al. (2021), in which families detected a highly addictive component in the use of smartphones.

With regard to the university of study variable, the students from the University of Granada appeared to be more favorable than the rest to the use of SMD to establish communication with the different educational agents (mean range of 73.05 on D1). Nevertheless, it was the students from the University Pablo de Olavide who were clearly in favor of the use of SMS, both in their future professional work and in language teaching (mean range of 79.65 on D2 and 67.60 on D3). Finally, with regard to forecast and limitations on the use of SMD and SMS, the students from the University of Málaga stood out from the rest (mean range of 64.94 on D4). Even though there are differences among the mean ranges from the different universities, in the four dimensions studied, a consensus seems to exist with regard to the acceptance of integrating SMD and SMS in secondary education and baccalaureate classrooms for

language teaching. This aspect was also detected by Yildiz (2018). The differences among universities may be due to the way in which the use of SMD and SMS are integrated in the master's degree in teaching courses in the different Andalusian universities. It would be very interesting to carry out an analysis of the presence of these matters in the curricula of each university so that these institutions can learn from the good practices of others. This would help standardize the instruction offered by the Andalusian Unified School District (DUA) and would ensure equal opportunities for all Andalusian citizens, regardless of where they complete their studies to enter the teaching profession.

Another matter that we intended to resolve with this study was to determine whether a different conception existed during the respondents' initial training, with regard to the use of SMD and SMS in their future professional work, in light of their previous studies and specialization in Spanish language and literature or foreign language. In this regard, the specialization variable proves to be statistically significant in all dimensions. Spanish language and literature students are generally more accepting of the use of SMD and SMS in the educational context (77.48 as opposed to 60.15 on D1; 74.67 versus 63.85 in D2; 72.37 compared to 66.88 on D3 and 72.42 versus 66.81 on D4). A similar situation occurs with the variable "previous degree", where in general terms, the students who entered the master's degree program with the preferred degree or a degree related to Spanish language and literature have a more favorable opinion regarding the use of SMD and SMS in education. We have no previous research with which to make comparisons, but a trend has been recorded in recent years to conduct research that takes into account these technologies in university studies (Martín-Díaz & Sampedro, 2023), their inclusion in Spanish language and literature classrooms (Álvarez-Ramos & Romero, 2018; Hernández-Ortega et al., 2021; Romero, Heredia & Romero-Claudio, 2023, among others) and a gradual integration of them for the teaching of foreign languages (Bañares & Rayón, 2019; Castillo-Rodríguez et al., 2022; Rodríguez-Núñez et al., 2017).

It is important to point out, as a limitation to this study, that the results cannot be generalized, as this is a non-significant sample in terms of the universe. However, we have verified that the results obtained are in agreement with those of previous studies and could serve as an excellent starting point for reflection by the research community. We have successfully demonstrated that there is a consensus among future secondary education and baccalaureate educators to use SMD and SMS as allies in education, but certain reticence is still detected, which may be related to the training received, a matter that should be explored in future research.

Declaration of Conflicting Interests

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