Table S1. Database, author, country, keywords, category, methodology, sample, instrument/technique, important results described in each article

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	1	(Manabat, 2021) [27]	Philippines	Isla Culion; Media and information literacy; Palawan; Philippines	Information Literacy Media Literacy	Qualitative	Students and teachers	Survey	The practical knowledge of the participants increased after being exposed to conferences and activities.
S	2	(López-Belmonte et al., 2019) [31]	Spain	Big data; Data management; Digital competence; Information and communication technologies (ICT)	Digital competence	Descriptive and correlational quantitative.	832 Spanish teachers.	Pre and post test questionnaire	The teachers obtained better assessments in the dimensions of storage and valorization, postulating as knowledgeable about the Big Data concept largely.
S	3	(López-Belmonte et al., 2020) [32]	Spain	Age; Digital competence; Pre-university teachers; Spain	Digital competence	Quantitative	611 Spanish teachers	TPACK questionnaire to measure digital literacy	The first three areas of the perceived digital competence: "Information and information literacy"; "Communication and collaboration" and "Creation of digital content", teachers who are not exceeding 40 years show a higher level of competence development.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	4	(Llamas-Salguero & Macías, 2017) [33]	Spain	Continuous training; Information and communication technologies; Interaction; New technologies; School system	Digital competence	Quantitative	137 Primary Education Teachers (EP) in 50 schools of education.	Questionnaire	The integration of web 2.0 and 3.0 technologies in all areas in the digital literacy curriculum requires the training of teachers to educate students with an approach considered and responsible for the management of ICT.
S	5	(Gunathilaka et al., 2022) [34]	Sri Lanka	COVID-19; digital; online education; Sri Lanka; stress	Digital Literacy	Quantitative	518 school teachers	Questionnaire	The success of augmented education could be obtained by investing in digital competence.
S	6	(Hidson, 2021) [35]	United Kingdom	Computing; Digital competence; PCK; Pedagogy; Teaching resources	Digital competence	Quantitative	9 experienced teachers	Structured interviews	The alignment of teachers' digital competence with their need to assimilate unknown but necessary concepts in the process of pedagogical reasoning facilitated teachers in the development of knowledge of subjects and knowledge of pedagogical content (PCK).

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	7	(How et al., 2022) [36]	Malaysia	Digital literacy skills; problems; quadratic equation; qualitative approach; teaching styles	Digital Literacy	Qualitative	4 teachers	Digcompedu Questionnaire	The didactic approach of teachers is based on existing hardware and software, such as Microsoft, Google, didactic material, Internet resources and mobile device applications.
S	8	(Kerkhoff & Makubuya, 2022) [37]	Kenya	-	Digital Literacy	Qualitative	Preschool, primary and secondary teachers	Questionnaires and interviews	The rapid evolution of scientific production of knowledge, suggests that on the one hand teachers opt for MOOC education for the ease of distance education.
S	9	(Miço & Cungu, 2022) [38]	Albania	Albania; digital competence in education; educational legislation; pre-university education; students; teacher survey; teachers	Digital competence	Quantitative	365 Albanian teachers who work in pre - university education.	Digcomp Questionnaire	The need for the acquisition of digital knowledge for teachers according to different age groups.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	10	(Trujillo-Torres et al., 2020) [39]	Spain	Digital competence; Early childhood education; ICT; Information literacy; Teachers	Information Literacy Digital competence	Quantitative	57 teachers	Survey	An optimal level of perceptions regarding the information area, regardless of the type of school, as well as the possible prediction, with respect to the typology, of some informational literacy variables.
S	11	(Alberola-Mulet et al., 2021)[40]	Spain	Digital competence; Early childhood education; ICT; Primary education; Teachers' beliefs	Digital competence (DC)	Qualitative	31 teachers from a childhood and primary education center	The Teachers Questionnaire consisted of 23 questions regarding the six Dig Comorg areas	The importance that teachers give to the DER, both in their perception and in practice.
W	12	(Beloni et al., 2022) [41]	Brazil	TDIC; TPACK; Digital Literacy; Teaching practice; Quiz	Digital Literacy	Qualitative	13 teachers	Survey	A proposal for a questionnaire that articulates digital literacy with TPACK, seeking to understand the social application of technologies according to their technological, pedagogical, content and

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									context knowledge.
S	13	(Cabero-Almenara et al., 2021) [42]	Spain	Delphi; DigCompEdu; Evaluation; Teaching digital competence	Digital Literacy	Qualitative	335 people participated.	Survey	Although they are very similar, the European framework for the teaching of digital competence is the most supported by experts.
S	14	(Barrientos-Báez et al., 2021) [43]	Spain	Digital Competence; Digital divide; Education; ICTs; Volunteer	Digital Literacy	Quantitative	Teachers of International University of La Rioja (UNIR)	Survey	The digital literacy project through volunteers, applying a humanizing and affective model, can be a very interesting tool to combat the lack of digital literacy in the elderly.
S	15	(Castellví et al., 2020) [44]	Spain	Critical digital literacy; Pre-service teachers; Social problems	Digital Literacy	Non - experimental design	847 rural teachers from different rural areas	Questionnaire	Their findings reveal that future teachers have difficulty generating critical speeches based on internet information about social problems.

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S	16	(Vanderschantz & Hinze, 2019) [45]	New Zealand	Children's Information Seeking; Digital Literacy; Information Literacy; Interview Study; Search Strategies	Digital Literacy Information Literacy	Quantitative	Teachers of two primary schools and an intermediate school.	Continuous professional development program on MakersPaces.	The need for informational literacy and search skills that must be integrated into the New Zealand curriculum within the ICT or literacy units.
S	17	(Beltrán-Sánchez et al., 2019) [46]	Sonora, Mexico	Educational technology; Educational technology; Information literacy; Primary school teachers; Teacher attitudes	Information Literacy (IL)	Quantitative	Sample of 203 teachers	Survey	A deficit due to the lack of training detected or the lack of quality of the same.
S	18	(Lagarto & Lopes, 2018) [47]	Portugal	Digital literacy; ICT; ICT skills; Teacher training	Digital Literacy	Quantitative and qualitative	572 teachers	Questionnaire	The ICT, as a rule, does not appear in the initial training of teachers and is carried out by self - domination, supported by friends and colleagues and within the framework of training departments.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	19	(Dhillon & Murray, 2021) [48]	United Kingdom	Digital literacy; E-learning; English for Academic Purposes (EAP); Language teacher professional development; Teacher education	Digital Literacy	Mixed	55 teachers surveyed and 4 interviewees	Survey	Institutional training currently consists of unique or occasional, irregular one -day or noon instead of a more systematic continuous development program.
S	20	(Shannon et al., 2019) [49]	North Ireland	Information literacy; Librarian teacher cooperation; Northern Ireland; Secondary education; Teachers	Information literacy	Quantitative	426 teachers from 16 primary schools	Semi - structured questionnaires and interviews	Despite the confidence in their own skills, understanding and informational literacy (AI) skills of the teachers they were underdeveloped. The majority of respondents had not received AI training or included AI's instruction in their teaching.
S	21	(Dias-Trindade et al., 2021) [50]	Portugal	COVID-19; DigCompEdu CheckIn; Digital competence; Digital technologies; Teacher training	Digital competence	Quantitative	434 Primary and Secondary Teachers	Digcompedu Questionnaire	The need for teachers to increase their level of digital competence through specific training and the importance of developing public policies that prepare teachers for a more digital school.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	22	(Valverde-Berrocoso et al., 2021) [51]	Spain	-	Digital competence	Descriptive and inferential quantitative	251 Teachers of Public Primary and Secondary Centers	Semi - structured interviews	Several weaknesses can be identified in digital competence in teachers, as well as in the initial/continuous training model, which contribute to the understanding of the difficulties found during "remote emergency education."
S	23	(Subekti et al., 2019) [52]	Indonesia	Challenges; Expectations; Information literacy; Scientific articles; Teachers; Writing	Information literacy	Qualitative	58 teachers from different secondary schools	T-Student test and the application of a linear regression model	Teachers still need more training sessions that focus on the continuity of doing scientific articles for professional development.
S	24	(Athanatou et al., 2023) [53]	Greece	Data driven decision making; DigCompOrg; ICT competence; Primary school; School improvement; Self-evaluation	Digital competence	Quantitative	37 school teachers	Survey	The percentage of results for the self -perception of teachers about the use of ICT in lessons, the digital competition of teachers, the use of digital content, pedagogical evaluation, digital communication with parents and digital support of school leadership They indicated

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									that the significant changes in the integration of ICTs continue to occur in the primary school, ICT culture and most of its components.
S	25	(Berger & Wolling, 2019) [54]	Germany	Digital literacy; Digital skills; Media education; Online risk; Protection of the private sphere; Protective skills; Teaching	Digital Literacy	Quantitative	315 teachers	Survey	Positive associations between the importance that teachers attribute to the digital, the knowledge they have of the guidelines for media education, their formal training in the media and their use of media and technology in class.
S	26	(Botturi, 2019) [55]	Switzerland	Digital and media literacy; Pre-primary education; Pre-service teachers; Primary education; Teacher education	Digital Literacy Media literacy	Quantitative	11 teachers	Observation -You are	That, despite the limited space in the curriculum and the available resources, even a short course can make a difference and allow teachers to integrate digital and media literacy (DML) into their profession.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	27	(Botturi & Beretta, 2022) [56]	Switzerland	Information Literacy; pre-service teachers; screencast; search behavior; teacher education	Information Literacy	Mixed	92 teachers	Expert judgment - Delphi	Teachers have a mainly technical vision of IL, which leads them to focus on basic computer literacy skills (how to use a search engine) and overlook mental processes (the need or information strategy).
S	28	(Cirus & Simonova, 2021) [57]	Czech Republic	Diffusion of innovations; Early adopter; Early majority; Innovator; Laggards; Late majority; Primary education	Digital Literacy	Empiricalanalitic methodology	167 primary school teachers	Questionnaire	Significant differences in relation to the type of center at the level of global media competence.
S	29	(Dos Santos et al., 2022) [58]	Brazil	Digital competence; Digital educational resources; User studies	Digital competence	Quantitative	1,414 Primary Education Teacher	Interviews	Teachers have used the Internet to search for information and consider adaptation to their students as a selection criteria. Regarding the use of digital resources, they are limited to simpler activities, such as the preparation of presentations.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	30	(Gentles & Haynes-Brown, 2021) [59]	Latin America and the Caribbean	COVID-19; ICT integration; Levels of technology use; Teachers; Teaching in a pandemic	Digital competence	Qualitative	53 teachers from 15 Latin American countries	Questionnaire	He suggests that teachers' concern for student loss of learning due to school closures trained them to overcome the barriers that normally prevent the use of ICT.
S	31	(Gonzales et al., 2020) [60]	Peru	Basic education; Media competence; Self-perception; Teaching staff	Digital competence	Quantitative	Sample of 78 teachers	Survey	The self -perception of media competition is distributed in a majority and medium levels.
S	32	(Gudmundsdottir et al., 2020) [61]	Spain and Norway	Cyberbullying; Digital content; Privacy; Professional digital competence; Student teacher	Digital competence	Quantitative	681 Spaniards and 563 Norwegian teachers	Pilot survey	The study provides a baseline in terms of knowledge about responsible use in participating universities.
S	33	(Guillén-Gámez et al., 2021) [62]	Spain	Digital competence; Factorial invariance; Psychometrics; Reliability; Research methods; Teachers; Tutorial action; Validity	Digital competence	Quantitative	1,098 active teachers	Survey	The reliability was very satisfactory and, in relation to the validity of construct, the results found a good adjustment of the model, both in the internal validity and in the factorial invariance.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	34	(Guillen & Mayorga-Fernández, 2022) [63]	Spain	Computer literacy; educational technology; rural education; teachers	Digital media	Quantitative	847 rural teachers from different rural areas	Questionnaire	An integrative attitude of each teacher-expressed in their digital skills, with respect to communication with both students and their families and other colleagues from the educational center.
S	35	(Gümüş & Kukul, 2023) [64]	Turkey	Digital Competencies; Digital literacy; Teachers' Digital competence	Digital competence Digital Literacy	Quantitative	695 teachers	Questionnaire	Compared to the Digcomp 2.1 framework developed by the European Union, it was determined that the ethical factor arose differently in this study. As a result, it can be said that the digital competence scale for teachers is a valid and reliable scale that can be used to measure the digital skills of teachers.
S	36	(Gutiérrez-Castillo et al., 2023) [65]	Spain	DigCompEdu; digital competence; expert judgement; learning with ICT; media evaluation; MOOC; teacher training	Digital competence	Quantitative	292 Primary teachers	Questionnaire	The validity of the tool produced (T-MOOC), as well as the uniformity of the criteria of experts participating in the evaluation.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	37	(Hibszer & Tracz, 2021) [66]	Poland	COVID-19 risk impact; e-learning; education; Poland; school	Digital competence	Quantitative	246 teachers	Questionnaire	Teachers found a series of difficulties in distance learning. As the lack of access from some students to computers, the insufficient competencies of teachers to teach at a distance, the organization of work and the fact that students bored themselves with this form of learning.
S	38	(Hurtado-Mazeyra et al., 2022) [67]	Peru	Basic education; DigCompEdu; digital competence (DC); information and communication technologies-ICTs; teaching	Digital competence	Quantitative	3142 Basic Education Teachers	Survey	A more significant number of teachers have an integrative competence level (B1), followed by the expert level (B2) and the explorer level (A2).
S	39	(Ishak et al., 2022) [68]	Malaysia	Pandemic; teaching and learning; technology integration; technology use	Digital competence	Quantitative	78 Primary and Secondary Teachers	Study of cases	We discovered that teachers in that particular area mainly used smartphones to access the Internet and make lessons due to the limited availability of devices at the end of the students, Internet connectivity and

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									limited instruction time.
S	40	(Lameras & Moumoutzis, 2021) [69]	Spain	Digital competencies; Digital education; Digital literacies; Inclusive digital learning; Teachers	Digital competence Digital Literacy	Qualitative	38 teachers	Own questionnaire validated by 10 judges	Six (6) digital skills and associated sub-competencies that can serve as a starting point for teachers to develop new or expand existing competences.
S	41	(Maina & Waga, 2019) [70]	Kenya	Competencies; Digital literacy; Teacher preparation	Digital Literacy	Quantitative	Teachers Group	Case study	Correlation between the level and the frequency of implementation.
S	42	(Mañanes & García-Martín, 2022) [71]	Spain	Epidemic; information and communication technologies; teacher; teachers' education; teaching profession	Digital competence	Quantitative	281 Primary Education Masters	Questionnaire	Digital competence correlates reversely with age, that its development is conditioned by the years of professional experience, while evidenced statistically significant differences depending on the gender.
S	43	(Martín & Martín, 2021) [72]	Spain	Distance study; Information and communication technologies; Learning	Digital competence	Quantitative	108 active Spanish teachers, between 23	Survey	They show statistically significant differences in the use and assessment of use of different digital

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
				process; Teaching; Telecommunication			and 65 years.		tools. In relation to sex, it was the male teachers who made a greater use of educational platforms and collaborative content creation tools, while women teachers made a greater use of gamification tools.
S	44	(López & Cascales, 2019) [73]	Spain	Digital competences; E-learning; Teacher training; Tutorial action	Digital competence	Quantitative	55 active teachers	Survey	There is a favorable attitude towards digital skills and their inclusion in tutorial action, this training activity improved technological competition within the tutorial action.
S	45	(Melash et al., 2020) [74]	Kenya	Competence of the future teacher; Digital competences; Digital curriculum; Digital educational system; Education programs (curricula)	Digital competence	Quantitative	91 teachers of preschool, primary and secondary schools.	A questionnaire consisting of 18 questions	The study shows how teachers can significantly involve their students in the creative resolution of problems using limited resources.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	46	(Nieto-Isidro et al., 2021) [75]	Spain	In-service teacher training; Information evaluation; Information literacy; Primary education; Secondary education; Teacher training	Information Literacy		Incidental sample of 18 primary education teachers from 4 educational centers.	Survey	They show how one of the critical links and at the same time weaker is the information evaluation dimension.
S	47	(Nieto-Isidro et al., 2021) [76]	Spain	information evaluation; information literacy; investigación educativa; primary education; teacher professional development; teacher training.	information literacy Digital competence	It developed in two phases.	442 active teachers and future professors from 7 educational centers in Spain.	Questionnaire	The improvement in the observed informational literacy is confirmed, but with lower increases in evaluation and processing for teachers and in evaluation and communication for students
S	48	(Núñez et al., 2022) [77]	Spain	Communication; Competence of the sense of initiative and entrepreneurship; Digital competence; Education; Education; Information; Linguistic competence; Media; Media competence; Media literacy; School radio; Skills; Social and	Media Literacy (ML)	Quantitative	Primary teachers	Survey	The positive effects that work with school radio has on the different competencies in these educational centers, since the effects are positive in all indicators, except in the use of the school library, in which the effect produced is neutral.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
				civic competence					
W	49	(Oudeweetering & Voogt, 2018) [78]	Holland	Curriculum development; digital literacy; primary education; secondary education; teacher agency; Twenty-first century competences; twenty-first century skills	Digital literacy	Qualitative	15,000 primary school teachers and 18,000 high school teachers	Survey	It shows that teachers perceive that their activities to promote communicative competences are currently integrated with ICT - related practices.
S	50	(Ozerbas & Ocal, 2019) [79]	Turkey	Digital literacy; Literacy; New literacy	Digital literacy	Quantitative	400 teachers and 356 parents	A survey in two versions in Basque and Spanish and the technique of the "snowball"	Parents find their own levels of digital literacy as "high", but find the level of digital literacy of their children as "medium", while teachers find their level of digital literacy as "high."
S	51	(Portillo et al., 2020) [80]	Spain	B-learning; Digital technology; Educational organization; Educational policy; Inclusive education	Digital competence	Quantitative	4586 teachers	AD HOC QUESTIONNAIRE.	Despite the deployment of devices there is still a very low implementation of DL and there is a significant relationship between the level and frequency of implementation.

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
S	52	(Pozo et al., 2020) [81]	Spain	Active methodologies; Digital competence; Flipped learning; ICT	Digital competence	Quantitative. Non - probabilistic sampling	627 teachers	Questionnaire	The results show that the teaching staff does not usually use the flipped learning in the training processes, mainly due to the lack of confidence towards this methodology and for presenting a low competence in digital techno -pedagogical skills.
S	53	(Pozo et al., 2020) [82]	Spain	Correlation analysis; Digital competence; Educational technology; Teacher education	Digital competence	Quantitative	520 Spanish teachers from the stages of Infant, Primary and Secondary.	Questionnaire	Women have a higher level in the creation of digital content than men, which stand out in problem solving.
S	54	(Soifah et al., 2021) [83]	Indonesia	-	Digital literacy	Quantitative	15 teachers who participated in a program for English teachers.	Questionnaire	Digital literacy had free Internet access. In the classroom, these teachers practiced digital literacy, using some digital tools.
S	55	(Walan & Gericke, 2023) [84]	Sweden	Classroom practices; Informal learning, Makerspace activities; STEM; Teacher	Digital competence	Qualitative	11 teachers of five different schools.	Questionnaire	The teachers found that there were possibilities and challenges in the transfer of Makerspace

DB	N°	Author/year	Country	Keywords	Category	Methodology	Sample	Instrument/ Technique	Important Results
				reflections; Transfer					activities to the classrooms.
S	56	(Yang et al., 2022) [85]	China	Assessment; China; Digital competence; In-service teachers; Perception; Pre-service teachers	Digital competence	A thematic approach for data analysis was used.	248 teachers in service	The Teachers Questionnaire consisted of 23 questions regarding the six Dig Comorg areas	The main findings are: (1) Participants have a good awareness and attitudes towards the use of ICT in daily work, but their educational practice is weak; (2) Teachers in service have a level of digital competence generally higher than pre-service teachers.

Legend:
S: Scopus
W: WoS