Supplementary Materials 1 (S1): Classification Tree

Operational definitions of the Classification tree

1. Access to technological resources: this refers to the real possibility of being in possession of and having access to technological and digital resources both in an educational setting (school) and in a domestic setting (home), as well as knowing how to use these resources.

1.1. Availability of resources: this specifically refers to access to resources in all settings.

1.1.1. At school: availability in the classroom and within the school grounds.

1.1.2. Outside of school: availability at each family home.

1.2. Autonomy: this refers to how much the person uses the resources and how competent a user they are.

1.2.1. Usage habits: user competency level, frequency and purpose for which they are used.

2. Assessment of ICT and e-learning in face-to-face teaching: this refers to the degree of adaptation, acceptance, use and perceived understanding of Information and Communication Technologies (ICT), and of related methodologies, in the context of classroom teaching.

2.1. Use of ICT in teaching: this refers to how often ICT are used in teaching, and for what purpose.

2.1.1. Use: perception of use as an educational resource.

2.1.2. Function: purpose for which they are used as an educational resource.

2.2. Assessment of ICT in context: this refers to the perspective and opinion on the use, applicability and suitability of ICT in the educational context.

2.2.1. Opinion on suitability for use and function: assessment of the need to use ICT in teaching and the way in which it is currently used.

2.3. Specific training: this refers to the suitability of personal resources (training, understanding, etc.) and material resources for the use of ICT in the educational context.

2.3.1. Specific training on teaching tools: Perception of the level of understanding that teachers and students have of the use of different educational devices and applications.

2.3.2. Suitability of the school: assessment of the resources and facilities that the school has available for use of ICT (equipment, maintenance, connection).

3. Effects of e-learning in remote teaching and lockdown: this refers to the degree of adaptation, use and perceived understanding of the e-learning methodology, and associated technological and digital resources, in the field of non-classroom teaching and during the lockdown.

3.1. Adaptation of ICT to content and subjects: this refers to the type of technological and digital resources that have been used during lockdown to apply an e-learning methodology. It also refers to how they were used in the different areas of the curriculum, considering the advantages and disadvantages of this methodology.

3.1.1. Platforms and applications used: the technological and digital resources used to monitor teaching.

3.1.2. Relevance of ICT to the different areas: assessment of the suitability of technological and digital resources for use in different subjects.

3.1.3. Function of ICT: main use given to the different technological and digital resources.

3.1.4. Benefits: advantages found in this type of teaching methodology.

3.1.5. Difficulties: disadvantages associated with the e-learning methodology.

3.1.6. Diversity outreach: perception of the possibility of being able to attend to the different needs of students.

3.2. Methodology: this refers to how the e-learning methodology has been applied, considering its different elements such as developing materials, related monitoring (and feedback), tasks and activities set, and the roles played by the main agents in the teaching-learning process (teachers and students).

3.2.1. Approach to tasks and materials: how the materials have been created, as well as an assessment of the volume of work set.

3.2.2. Monitoring and assessment: description of how feedback on the tasks and materials created was applied.

3.2.3. Type of activity: this is specifically focused on differentiating between individual work and group or cooperative work.

3.2.4. Main roles: students and teachers. Perception of their functions, including aspects such as interest or involvement.

3.3. Facilitating elements: this refers to those aspects which facilitate and promote proper use and scope of the e-learning methodology.

3.3.1. Personal aspects: this refers to those aspects which depend directly on students, family members or teachers, such as access to technological resources.

3.3.2. Contextual aspects: these focus on management and organisational aspects associated with schools and education authorities.

3.3.3. Technical/technological aspects: these are inherent aspects of technological and digital resources.

3.4. Limiting aspects: this refers to those aspects that can be considered as stumbling blocks for proper use and scope of the e-learning methodology.

3.4.1. Personal reasons: aspects of the personal and family situation, such as lack of access to technological devices or to the Internet.

3.4.2. Contextual reasons: aspects that depend directly on the authorities or the management board (guidelines for assessment and marking, etc.)

3.4.3. Technical/technological reasons: aspects which depend directly on the functioning of the technological and digital resources.

3.5. Effects on learning and emotions: this refers to the perception of acquired learning during lockdown and via the e-learning methodology, as well as the psychological experience of lockdown.

3.5.1. Assessment of perceived learning: opinion on the level and quality of learning achieved through the e-learning methodology.

3.5.2. Psychological perception (emotional and cognitive): feelings triggered by this teaching methodology.

3.6. Support agents: this refers to the support processes carried out by each of the educational agents as a factor relating to success in the use of the e-learning methodology.

3.6.1. Teachers: this refers to their role as an emotional support, not to the role of guiding the learning process.

3.6.2. Family members: functions carried out by family members during the support process, whether on an academic or emotional level.

3.6.3. Classmates and friends: role of peers during the use of this teaching methodology during lockdown.

Table 1. Presence of each unit of information in the total number of files analysed

Clasification Tree	Arc. Stu		Arc. Fam		Arc. Tea		Arc. MMB	
	N	%	N	%	N	%	N	%
1. Access to technological resources	15	50.00	25	100.00	29	100.00	6	100.00
1.1. Availability of resources	9	30.00	25	100.00	29	100.00	6	100.00
1.1.1. At the school	3	10.00	13	52.00	19	65.52	5	83.33
1.1.2. Outside of the school	7	23.33	24	96.00	28	96.55	6	100.00
1.2. Autonomy	7	23.33	23	92.00	26	89.66	6	100.00
1.2.1. Usage habits	7	23.33	23	92.00	26	89.66	6	100.00
2. Assessment of ICT and e-learning in face-to-face teaching	29	96.67	25	100.00	29	100.00	6	100.00
2.1. Use of ICT in teaching	28	93.33	24	96.00	27	93.10	6	100.00
2.1.1. Use	26	86.67	23	92.00	20	68.97	6	100.00
2.1.2. Function	17	56.67	10	40.00	16	55.17	1	16.67
2.2. Assessment of ICT in context	15	50.00	24	96.00	28	96.55	6	100.00
2.2.1. Opinion on suitability for use and function	15	50.00	24	96.00	28	96.55	6	100.00
2.3. Specific training	1	3.33	25	100.00	29	100.00	6	100.00
2.3.1. Specific training on teaching tools	1	3.33	25	100.00	29	100.00	6	100.00
2.3.2. Suitability of the school	0	0.00	21	84.00	24	82.76	5	83.33
3. Effects of e-learning in remote teaching and lockdown	30	100.00	25	100.00	29	100.00	6	100.00
3.1. Adaptation of ICT to content and subjects	30	100.00	25	100.00	29	100.00	6	100.00
3.1.1. Platforms and applications used	29	96.67	23	92.00	24	82.76	6	100.00
3.1.2. Relevance of ICT to the different areas	5	16.67	5	20.00	11	37.93	3	50.00
3.1.3. Role of ICT	6	20.00	0	0.00	16	55.17	1	16.67
3.1.4. Benefits	12	40.00	20	80.00	28	96.55	6	100.00
3.1.5. Difficulties	19	63.33	22	88.00	22	75.86	6	100.00
3.1.6. Diversity outreach	3	10.00	24	96.00	27	93.10	5	83.33
3.2. Methodology	30	100.00	25	100.00	29	100.00	6	100.00
3.2.1. Approach to tasks and materials	30	100.00	17	68.00	15	51.72	6	100.00
3.2.2. Monitoring and evaluation	5	16.67	21	84.00	25	86.21	6	100.00
3.2.3. Types of activities	2	6.67	25	100.00	27	93.10	6	100.00
3.2.4. Main roles: students and teachers	30	100.00	24	96.00	26	89.66	6	100.00
3.3. Facilitating elements	7	23.33	8	32.00	9	31.03	1	16.67
3.3.1. Personal aspects	7	23.33	6	24.00	2	6.90	1	16.67
3.3.2. Contextual aspects	0	0.00	1	4.00	7	24.14	0	0.00
3.3.3. Technical/technological aspects	0	0.00	1	4.00	1	3.45	0	0.00
3.4. Limiting aspects	24	80.00	17	68.00	26	89.66	6	100.00
3.4.1. Personal reasons	11	36.67	12	48.00	19	65.52	6	100.00
3.4.2. Contextual reasons	3	10.00	3	12.00	13	44.83	1	16.67
3.4.3. Technical/technological reasons	17	56.67	8	32.00	12	41.38	1	16.67
3.5. Effects on learning and emotions	25	83.33	25	100.00	29	100.00	6	100.00
3.5.1. Assessment of perceived learning	23	76.67	18	72.00	17	58.62	1	16.67
3.5.2. Psychological perception	11	36.67	25	100.00	28	96.55	6	100.00
3.6. Supporting agents	30	100.00	25	100.00	29	100.00	6	100.00
3.6.1. Teachers	4	13.33	6	24.00	24	82.76	4	66.67
3.6.2. Family members	26	86.67	24	96.00	26	89.66	6	100.00
3.6.3. Classmates and friends	29	96.67	13	52.00	16	55.17	3	50.00

Note: Arc. = Files; Stu = Students; Fam = Family Members; Tea = Teachers; MMB = Members of management boards.

Table 2. Number of lines of the different coded information units

Clasification Tree	Lines Stu		Lines Fam		Lines Tea		Lines MMB	
	N	%	N	%	N	%	N	%
1. Access to technological resources	20	2.47	187	8.09	325	8.70	64	8.96
1.1. Availability of resources	12	1.48	98	4.24	151	4.04	39	5.46
1.1.1. At the school	3	0.37	32	1.38	54	1.45	19	2.66
1.1.2. Outside of the school	9	1.11	66	2.86	97	2.60	20	2.80
1.2. Autonomy	8	0.99	89	3.85	174	4.66	25	3.50
1.2.1. Usage habits	8	0.99	89	3.85	174	4.66	25	3.50
2. Assessment of ICT and e-learning in face-to-face teaching	93	11.50	467	20.21	706	18.90	176	24.65
2.1. Use of ICT in teaching	67	8.28	87	3.76	134	3.59	36	5.04
2.1.1. Use	38	4.70	51	2.21	56	1.50	24	3.36
2.1.2. Function	29	3.58	36	1.56	78	2.09	12	1.68
2.2. Assessment of ICT in context	25	3.09	119	5.15	103	2.76	44	6.16
2.2.1. Opinion on suitability for use and function	25	3.09	119	5.15	103	2.76	44	6.16
2.3. Specific training	1	0.12	261	11.29	469	12.56	96	13.45
2.3.1. Specific training on teaching tools	1	0.12	166	7.18	328	8.78	66	9.24
2.3.2. Suitability of the school	0	0.00	95	4.11	141	3.78	30	4.20
3. Effects of e-learning in remote teaching and lockdown	696	86.03	1657	71.70	2704	72.40	474	66.39
3.1. Adaptation of ICT to content and subjects	171	21.14	380	16.44	774	20.72	152	21.29
3.1.1. Platforms and applications used	47	5.81	62	2.68	125	3.35	30	4.20
3.1.2. Relevance of ICT to the different areas	7	0.87	20	0.87	37	0.99	11	1.54
3.1.3. Role of ICT	15	1.85	0	0.00	63	1.69	2	0.28
3.1.4. Benefits	35	4.33	95	4.11	165	4.42	32	4.48
3.1.5. Difficulties	58	7.17	133	5.76	192	5.14	56	7.84
3.1.6. Diversity outreach	9	1.11	70	3.03	192	5.14	21	2.94
3.2. Methodology	275	33.99	510	22.07	690	18.47	107	14.99
3.2.1. Approach to tasks and materials	111	13.72	60	2.60	62	1.66	25	3.50
3.2.2. Monitoring and evaluation	11	1.36	110	4.76	207	5.54	35	4.90
3.2.3. Types of activities	4	0.49	84	3.63	118	3.16	19	2.66
3.2.4. Main roles: students and teachers	149	18.42	256	11.08	303	8.11	28	3.92
3.3. Facilitating elements	12	1.48	29	1.25	30	0.80	3	0.42
3.3.1. Personal aspects	12	1.48	19	0.82	6	0.16	3	0.42
3.3.2. Contextual aspects	0	0.00	5	0.22	21	0.56	0	0.00
3.3.3. Technical/technological aspects	0	0.00	5	0.22	3	0.08	0	0.00
3.4. Limiting aspects	55	6.80	109	4.72	272	7.28	48	6.72
3.4.1. Personal reasons	20	2.47	42	1.82	118	3.16	36	5.04
3.4.2. Contextual reasons	7	0.87	46	1.99	109	2.92	9	1.26
3.4.3. Technical/technological reasons	28	3.46	21	0.91	45	1.20	3	0.42
3.5. Effects on learning and emotions	68	8.41	322	13.93	440	11.78	79	11.06
3.5.1. Assessment of perceived learning	51	6.30	102	4.41	128	3.43	8	1.12
3.5.2. Psychological perception	17	2.10	220	9.52	312	8.35	71	9.94
3.6. Supporting agents	115	14.22	307	13.28	498	13.33	85	11.90
3.6.1. Teachers	5	0.62	18	0.78	214	5.73	19	2.66
3.6.2. Family members	48	5.93	180	7.79	207	5.54	55	7.70
3.6.3. Classmates and friends	62	7.66	109	4.72	77	2.06	11	1.54

Note: EStu = Students; Fam = Family Members; Tea = Teachers; MMB = Members of management boards.

Supplementary Materials 2 (S2): Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

This is the COREQ checklist which accompanies the qualitative data gathering analysis for this dataset.

No	Item	Guide questions/description
Domain 1: Research team and reflexivity		
Personal Characteristics		
1.	Interviewer/facilitator	Which author/s conducted the interview or focus group? The two trained interviewer were the first and second author. Third and four author were involved into the interview design.
2.	Credentials	What were the researcher's credentials? *E.g. PhD, MD* The second author was a PhD candidate. The first, second and third authors were PhD.
3.	Occupation	What was their occupation at the time of the study? First author: PhD Assistant Professor; second author: PhD candidate, teaching on Primary School; third author: Associate Professor; fourth author: Associate Professor
4.	Gender	Was the researcher male or female? All the authors were male.
5.	Experience and training	What experience or training did the researcher have? The authors had 11, 1, 25 and 14 years of experience as researchers. The first and third author were PE researcher. The second author was a Primary School teacher who had iniciated his PhD programme. The fourth author was a neuropychological scientist and

No	Item	Guide questions/description
		methodologist.
Relationship with participants		
6.	Relationship established	Was a relationship established prior to study commencement? We contacted to the participant when the study began by e-mail. Participants met the first and second author at the time of the interviews.
7.	Participant knowledge of the interviewer	What did the participants know about the researcher? e.*g. personal goals, reasons for doing the research* Participants knew that the first and second researchers were from Faculty of Education (University of Zaragoza, Spain). The informed consent forms explained the general study purposes. In the case of students, the informed consent included the participants' parents signed.
8.	Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? Participants knew that interviewers were researchers from University of Zaragoza. They were told that we needed their opinion about e-learning during the lockdown caused by COVID-19.
Domain 2: study design		
Theoretical framework		
9.	Methodological orientation and Theory	What methodological orientation was stated to underpin the study? The thematic analysis focused on identifying assessments related to the benefits and limitations associated with e-learning. Content analysis was chosen as a methodological

No	Item	Guide questions/description
		orientation.
Participant selection		
10.	Sampling	How were participants selected? Sampling was done following a convenience sampling process taking into consideration several criteria: gender-parental role (Woman-Mother/Man-Father), educational level (Primary/Secondary/Non-compulsory Secondary), type of educational institution (State/Private), and availability and willingness to participate.
11.	Method of approach	How were participants approached? e.*g. face-to-face, telephone, mail, email* An e-mail with an invitation to participate in the study was sent out. Then, a link to Google Forms showing the informed consent and the request for sample identification data was sent. The open-ended questionnaire for students was filled out on this same link. For all other educational agents, a semi-structured interview was conducted online.
12.	Sample size	How many participants were in the study? 30 students, 25 relatives, 29 teachers and 6 members of the management teams. 90 participants took part in the study.
13.	Non-participation	How many people refused to participate or dropped out? Reasons? One relative, three teachers and three members of the management boards refused to participate because they answered the short questionnaire in the initial e-mail, but they did not accepted to have an interview.

No	Item	Guide questions/description
Setting		
14.	Setting of data collection	Where was the data collected? e.*g. home, clinic, workplace* Children's open questionnaire were done by a Google Forms. It was necessary to have their parent´s sign to continue. Adults were interviewed by on-line interviews.
15.	Presence of non-participants	Was anyone else present besides the participants and researchers? In the case of students, parental presence was recommended.
16.	Description of sample	What are the important characteristics of the sample? *e.g. demographic data, date* Students, teachers, and members of management boards from primary and secondary schools participated in the study, as well as families of students at these same educational levels. There were 30 participants in the student category (average age 13.87±3.29 years): 11 (36.67%) females and 19 (63.33%) males, 12 (40%) from state schools and 18 (60%) from private schools, and 10 (33.33%) from primary schools, 10 (33.33%) from secondary schools, and 10 (33.33%) from non-compulsory secondary education. There were 29 participants in the teacher category (36.34±8.8 years): 10 (34.48%) females and 19 (65.52%) males, 15 (51.72%) from state schools and 14 (48.28%) from private schools, and 19 (65.52%) from primary schools and 10 (34.48%) from secondary schools. There were 6 participants in the members of management boards category (44±5.77 years): 3 (50%) females and 3 (50%) males, 3 (50%) from state schools and 3 (50%) from private schools. There were 25 participants in the family category (46.6±5.28 years): 13 (52%) women-mothers

No	Item	Guide questions/description
		and 12 (48%) men-fathers, 10 (40%) from state schools and 15 (60%) from private schools, and 11 (44%) from primary schools, 8 (32%) from secondary schools and 6 (24%) from non-compulsory secondary education.
Data collection		
17.	Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested? The scripts of data collection tools were made *ad hoc* by authors in line with previous studies consulted. It was not pilot-tested.
18.	Repeat interviews	Were repeat interviews carried out? If yes, how many? There were not repeat interviews
19.	Audio/visual recording	Did the research use audio or visual recording to collect the data? All the interviews were video-recorded.
20.	Field notes	Were field notes made during and/or after the interview or focus group? There were not field notes during or after the interviews.
21.	Duration	What was the duration of the interviews or focus group? Students open questionnaire took about 20 minutes each one. Adults interviews had an average duration of 30 minutes.
22.	Data saturation	Was data saturation discussed? No, it was not.

No	Item	Guide questions/description
23.	Transcripts returned	Were transcripts returned to participants for comment and/or correction? No, they were not returned.
Domain 3: analysis and findings		
Data analysis		
24.	Number of data coders	How many data coders coded the data? The second author was the only data coder. The first author checked the coding. There were two different concordance analysis depending on the instrument: open questionnaire for students (k=.91) os adult interview (k=.86).
25.	Description of the coding tree	Did authors provide a description of the coding tree? Yes, in the Supplementary Material.
26.	Derivation of themes	Were themes identified in advance or derived from the data? The analysis was both deductive (to study previously raised problems and elements) and inductive (allowed new issues to emerge). The original classification tree was built based on the previously considered concept. The final thematic analysis was promoted by previously established themes that were, mixed with the emerging ones seen in the data.
27.	Software	What software, if applicable, was used to manage the data? The Nvivo software (version 12 Plus, https://www.qsrinternational.com/nvivo/home) was used to analyze all the contents from interviews and focus groups.
28.	Participant checking	Did participants provide feedback on the findings? No, they did not provide feedback.

No	Item	Guide questions/description
Reporting		
29.	Quotations presented	Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e.*g. participant number* Yes, a real quote from a participant was used in each thesis on all the themes. An in-depth hermeneutical analysis was performed. Yes, each quotation was identified. The coding used to identify each extract was based on three digits: the first number refers to the specific open questionnaire or interview (numbered from 1 to 25); a descriptor of the analysis group ("Fam" for relatives; "MAE" for Primary School teaches; "PRO" for Secundary and High School teaches; "DIR" for members of the management teams); finally, for students and relatives the last code indicated the educational stage ("PRI" for Primary School; "ESO" for Secundary School; "Bac" for High School).
30.	Data and findings consistent	Was there consistency between the data presented and the findings? Yes, an attempt was made to gain consistency through triangulations.
31.	Clarity of major themes	Were major themes clearly presented in the findings? Yes, the major themes are clearly identified by section headings.
32.	Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes? Yes, there is. For example minor themes such as teacher’s and student’s roles were mentioned.