CLILNetLE

DIGITAL PRACTICES IN AND OUT OF THE CLIL CLASSROOM: ITALY

A Report by CLILNetLE Working Group 4

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NOTE. This country report presents results from the Italian dataset, collected as part of two pan-European surveys administered by WG4 of the COST Action CLILNetLE. For the main report see *Digital Practices in and out of the CLIL Classroom: A pan-European survey of students and teachers*.

Report published in July 2024

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1. Digital Literacies Student Survey (DLSS): Italy

1.1. Introduction

The survey was undertaken from March 27, 2024, to May 31, 2024, in the Lombardy, in the Milan, and in the Brescia areas. It was delivered to two lower-secondary schools and three upper-secondary schools. Schools were selected based on the fact that the teachers undertook CLIL training. As for the lower-secondary schools, we contacted the principals, set up an agreement between the schools and our university department, and sent out informed consent to parents. The Italian legislation requires both parents and guardians to give explicit consent to participate in research studies. A link to the survey was sent to all participants who agreed to take part in the study. As for the upper-secondary schools, only teachers of the last year of schooling were directly contacted and the survey was sent out only to students above 18 years old. In this case, the link was shared by the teachers during school hours and compiled during the lesson. The greatest challenge was to prepare, distribute, and collect informed consent letters from parents.

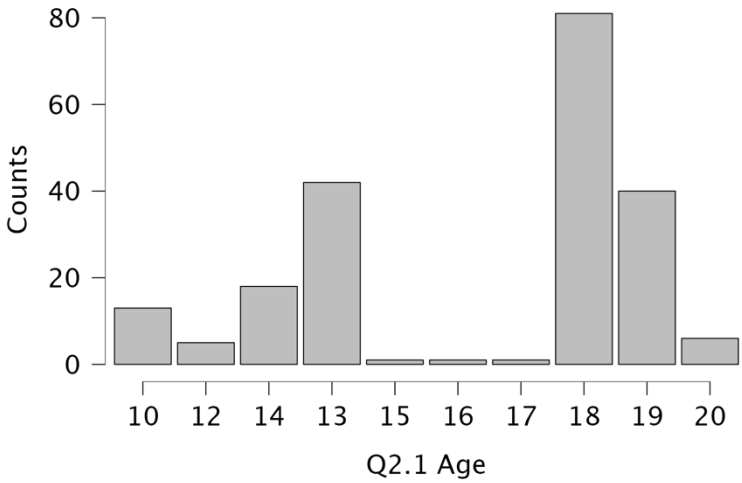
CLIL in Italy is compulsory by law (Moratti's law 53, 2003) in all upper-secondary schools in the last year of schooling for at least one subject. In licei linguistici, it is compulsory from the third year onwards for at least two subjects. At the moment of writing the present report, for primary and lower-secondary schools, CLIL training courses for teachers were issued by the Ministerial Decree n.65/2023.

1.2. Summary of main findings

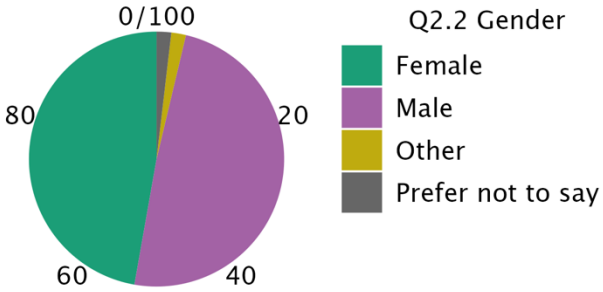
- The sample was composed of students from 10 to 20 years old, the majority of them living in urban and suburban areas, and mostly being italophones.
- The main CLIL language in our sample was English.
- The majority of the students accessed the internet daily at home and at school.
- Mobile phones and new-generation laptop computers were the most used digital devices for extramural activities.

1.3. Participant background

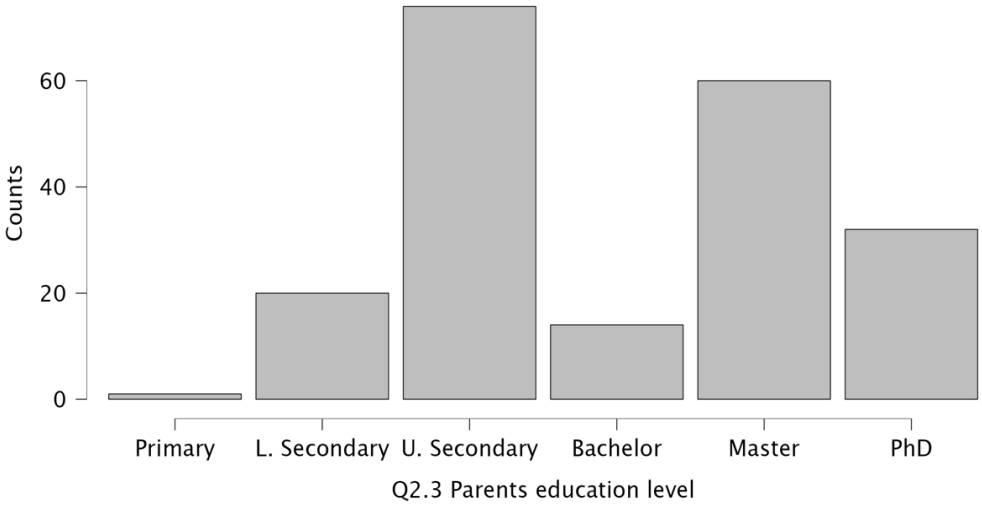
The survey was distributed in both lower and upper secondary schools. Most respondents were 13 or 18 years old.



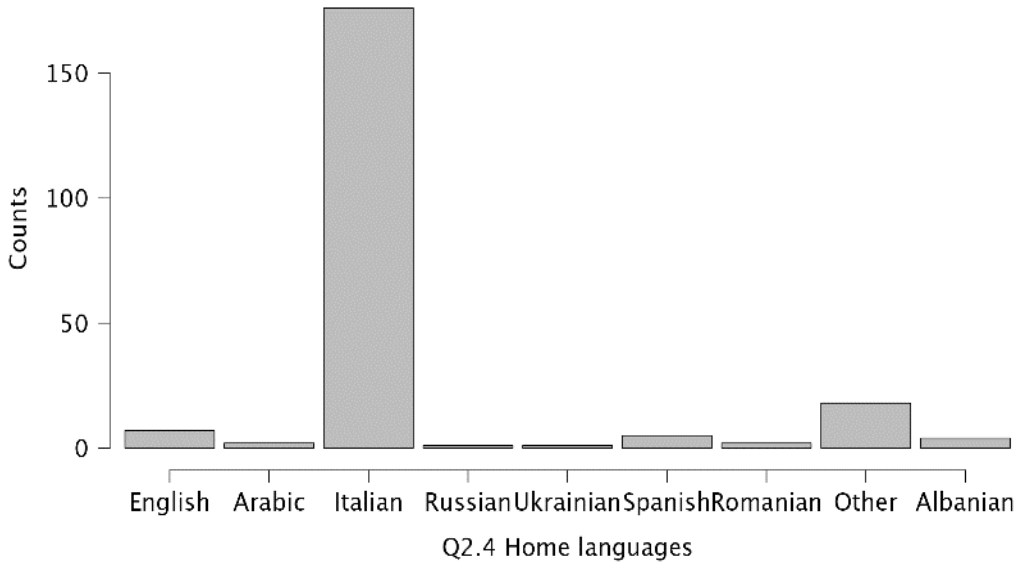
The respondents were evenly distributed by **gender**.



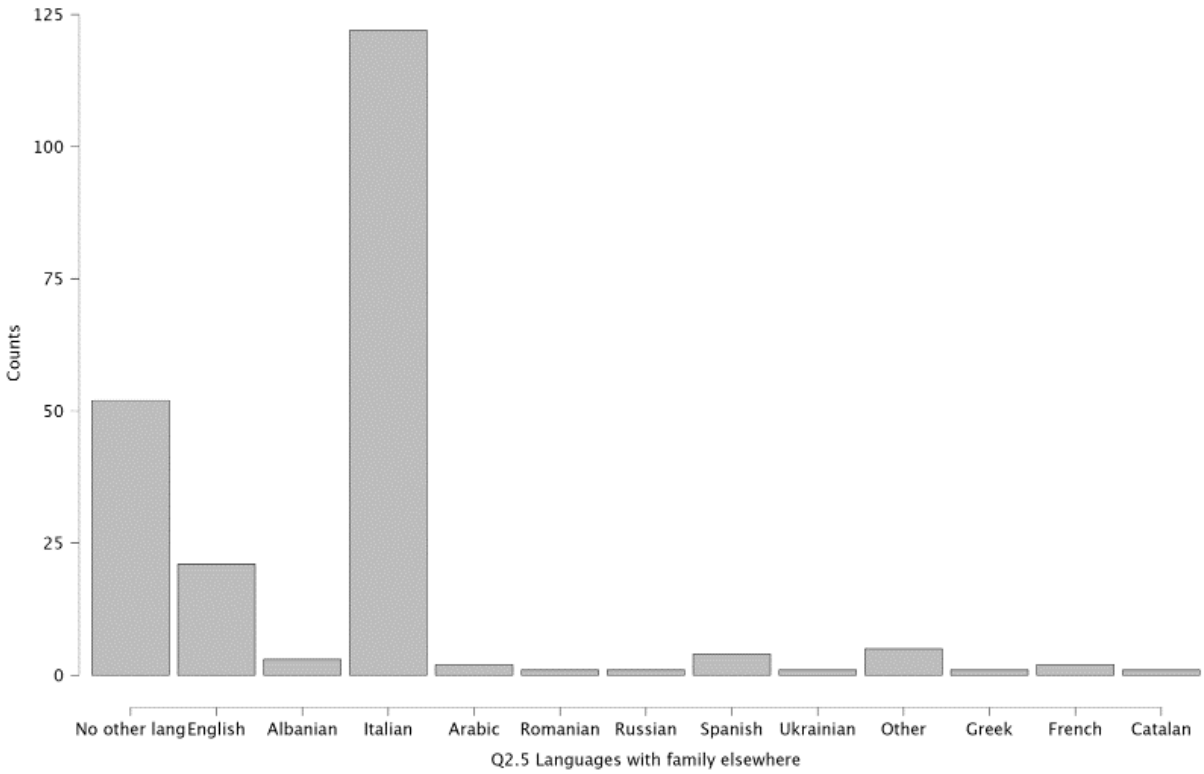
According to students, most of their **parents** in the sample had a high **level of education**, with the majority holding either a master's degree (*N*=60) or a PhD (*N*=32).



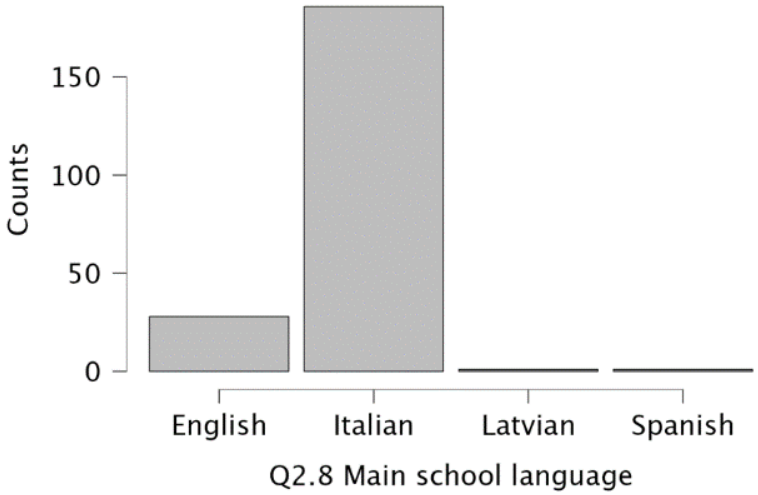
The large majority (*N*=176) of students declared speaking Italian with their parents and siblings. Among other languages, English, Spanish, Albanian, Romanian, Arabic, and local dialects were the most cited.



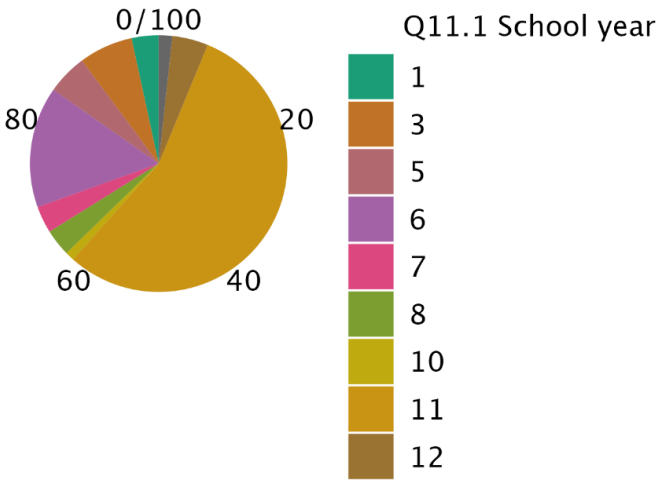
Italian was the primary **language** spoken outside the home (*N*=123). As for the other languages, this figure mirrors the context described in the previous histogram.



Italian was the **main language of schooling** (*N*=186). English (*N*=28) was reported by students as being the second language of schooling, after which came Latvian and Spanish.

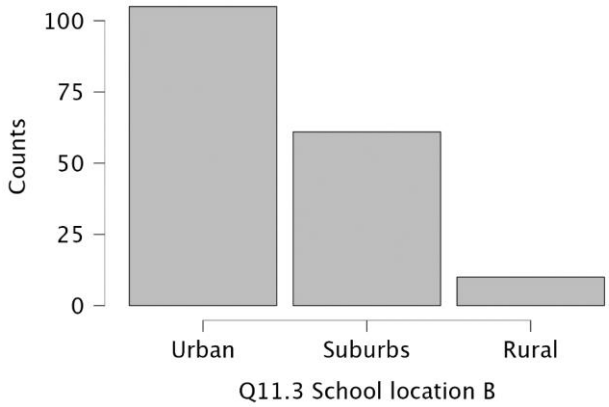


Most of the students were in their final year of upper secondary school. Also, a significant number of respondents were in their final year of lower secondary school. This is in line with the fact that the questionnaire was administered mostly to students from the last year of lower and upper secondary school.



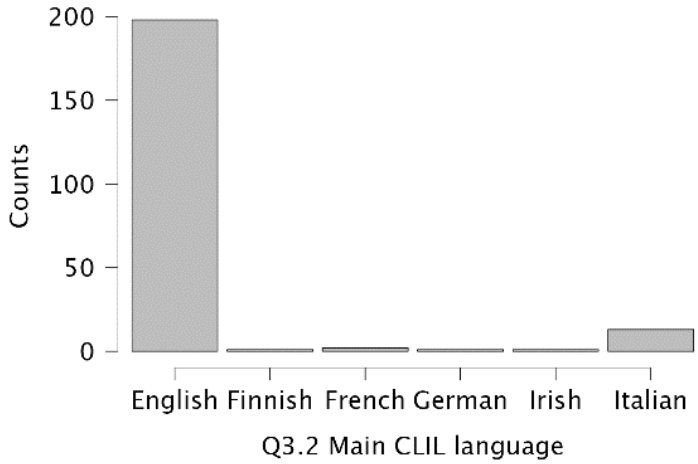
Most participants stated that they came from urban (*N*=105) and suburban areas (*N*=61), specifically Milan and Brescia. Only ten students declared that they came from rural areas.

Q11.3 School location B	Frequency	Percent	Valid Percent	Cumulative Percent
Urban	105	48.611	59.659	59.659
Suburbs	61	28.241	34.659	94.318
Rural	10	4.630	5.682	100.000
Missing	40	18.519		
Total	216	100.000		



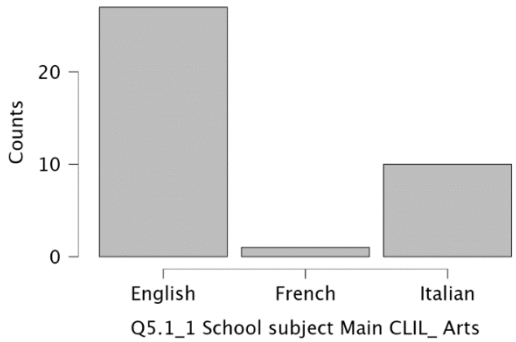
1.4. Participants' CLIL learning experience

Students stated that the **main CLIL language** used was English (*N*=198), with Italian being used occasionally (*N*=13) as well. The other languages (Finnish, French, German, and Irish) showed a very low count. This is in line with the fact that CLIL for English is compulsory by law in the last year of schooling of all upper secondary schools in Italy. The fact that the students declared that Italian was used too might be related to the fact that Italian was the language of instruction for students who were non-italophones. This same trend was also reflected in the analysis of the main CLIL subjects and languages used (see below).

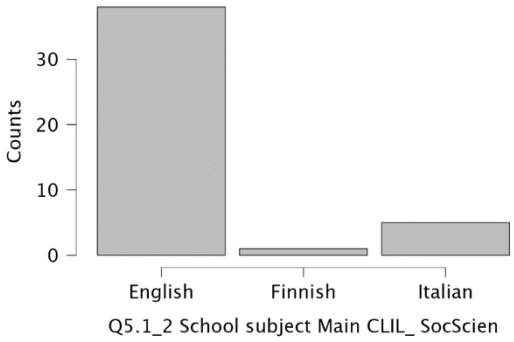


The following histograms illustrate the **main CLIL subjects** of the participants:

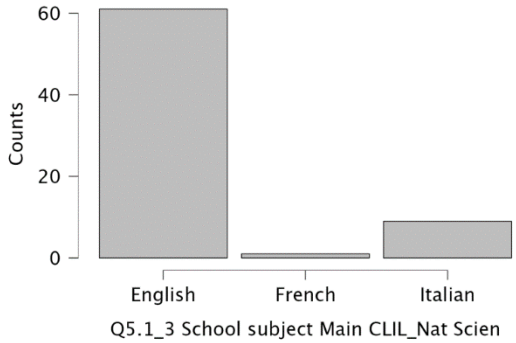
ARTS



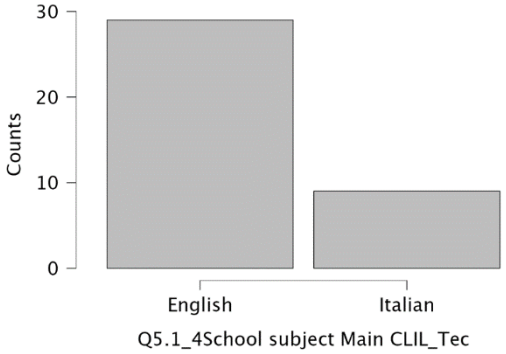
SOCIAL SCIENCES



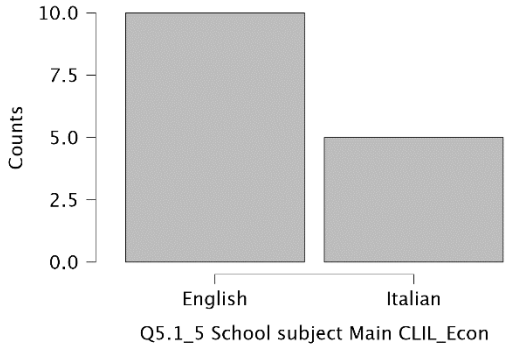
NATURAL SCIENCES



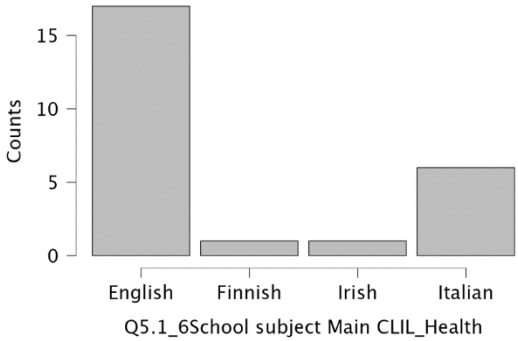
TECHNOLOGY



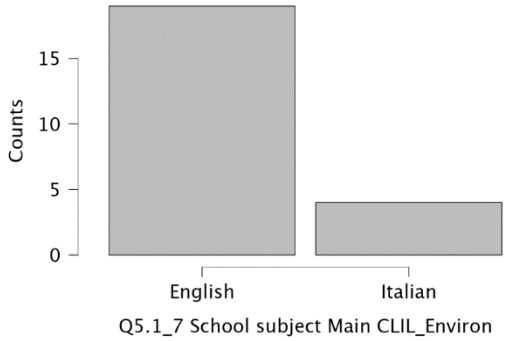
ECONOMY



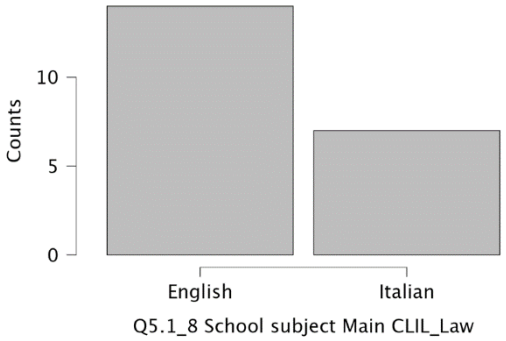
HEALTH



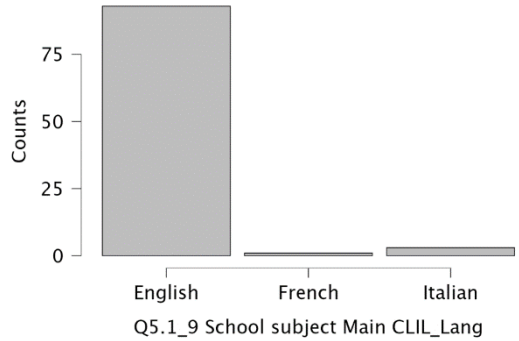
ENVIRONMENT



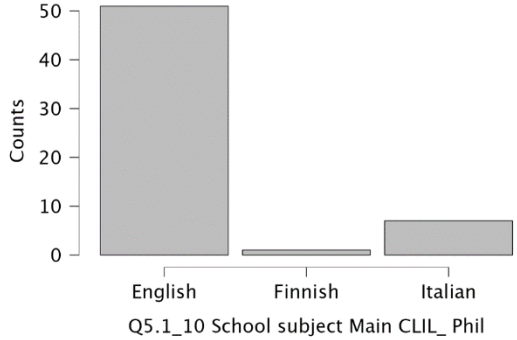
LAW



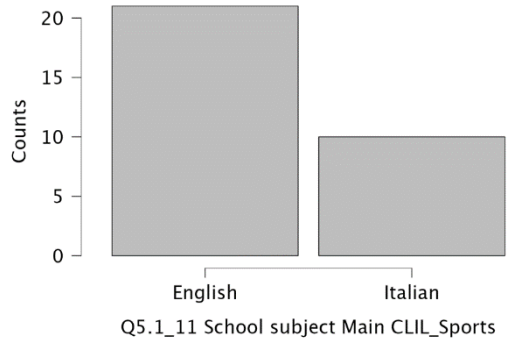
LANGUAGES



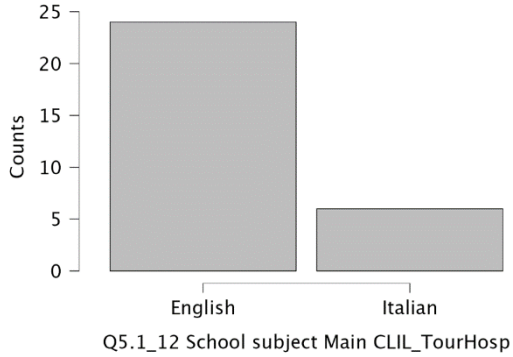
PHILOSOPHY



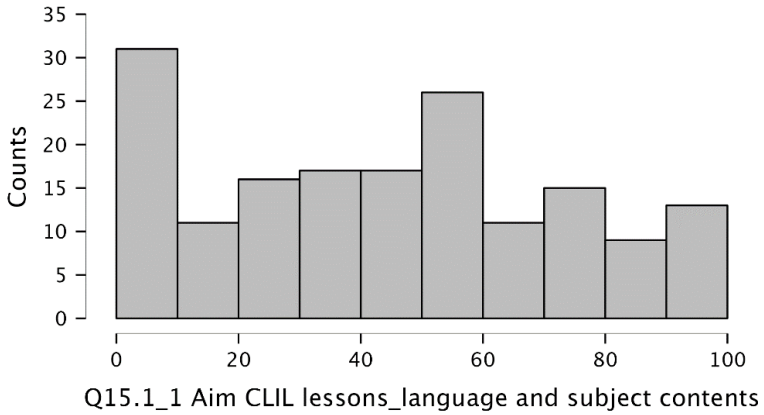
SPORTS



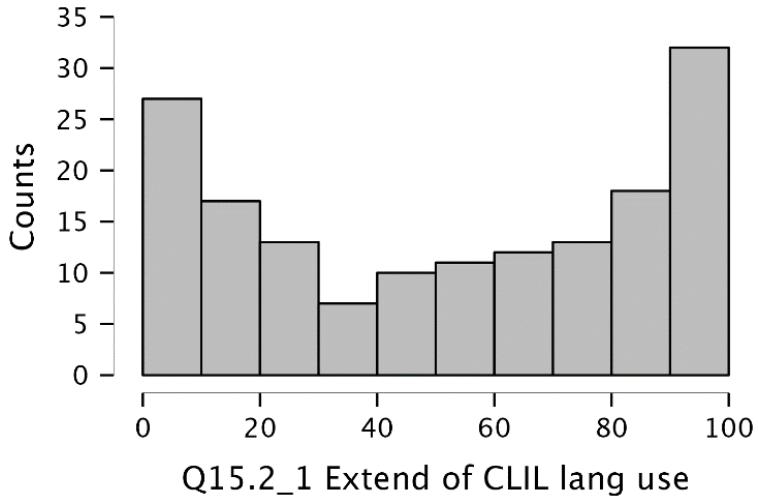
TOURISM AND HOSPITALITY



The figure below shows a continuum from a **main focus** on learning the language (0% left-hand side) to a main focus on learning the content (100% right-hand side) with a slight emphasis on content. This is in line with the fact that, by definition, CLIL should aim to balance content and language objectives.

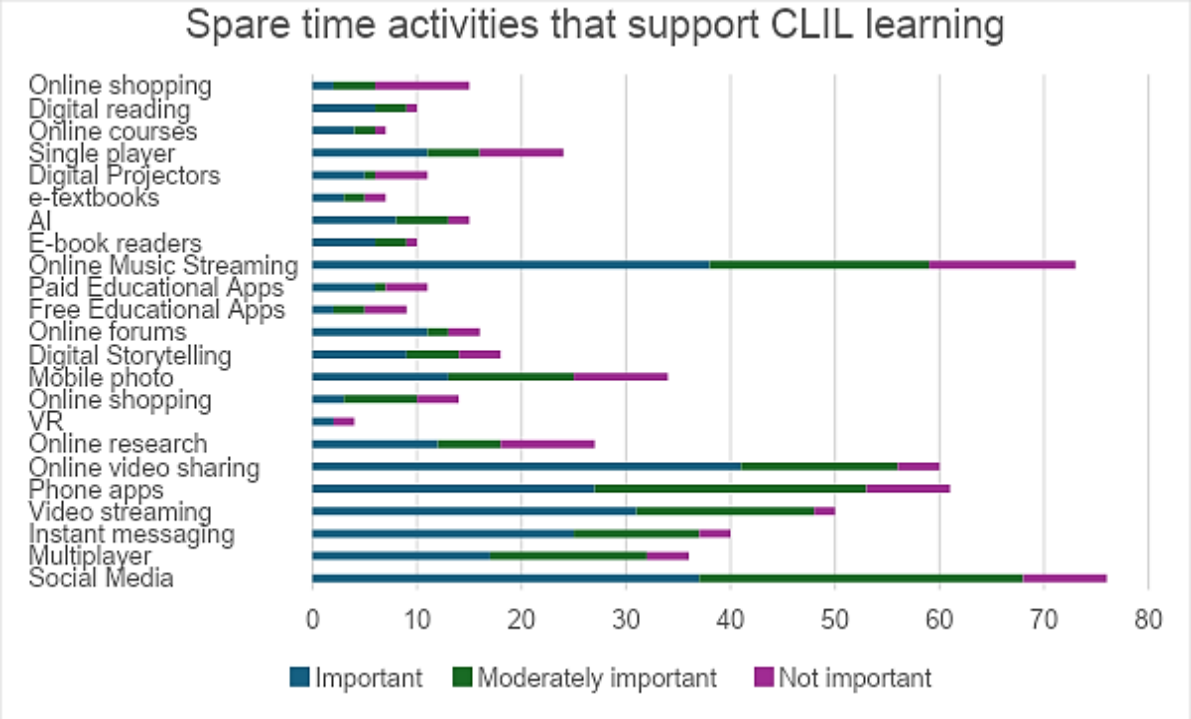


The following figure shows a continuum from a **main focus on CLIL** as being carried out in a monolingual manner (0% left hand side) or CLIL being carried out in a multilingual manner (100% right hand side). The students in this sample think that CLIL lessons tend to be multilingual rather than monolingual.



1.5. Focus on spare time

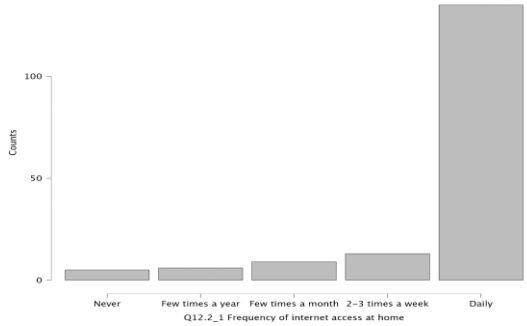
Next, we looked at the **spare time activities that supported CLIL learning**. Online video sharing (*N*=41), music streaming (*N*=38), and social media (*N*=37) were considered the spare time activities that mostly support CLIL learning.



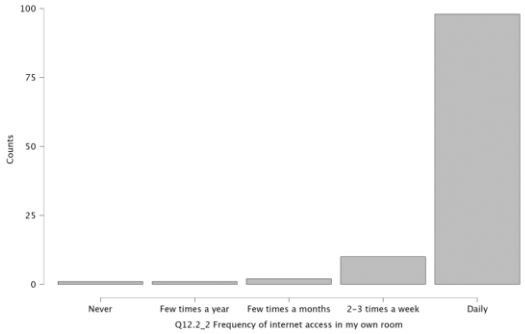
1.6. Access to digital devices in and out of school

Regarding students' **access to digital devices**, results show that students accessed the internet daily from private and familiar spaces, while access in public settings appeared to be evenly distributed and less frequent.

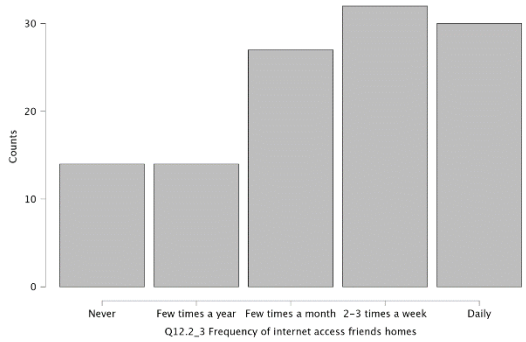
AT HOME



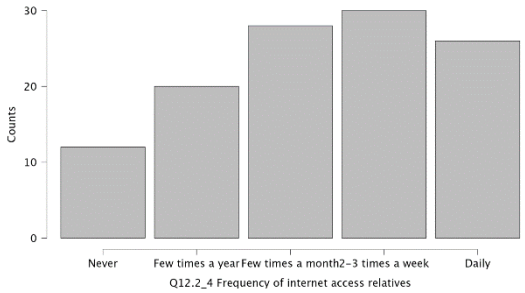
IN MY OWN ROOM



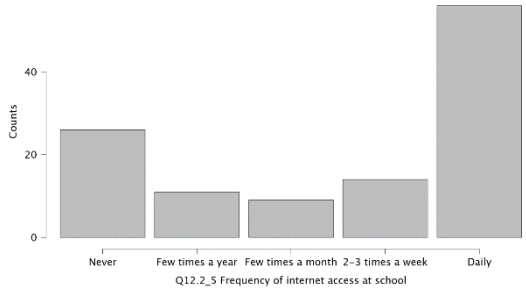
FRIENDS HOMES



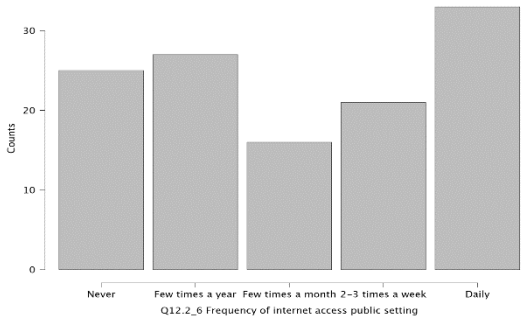
RELATIVES HOMES



AT SCHOOL

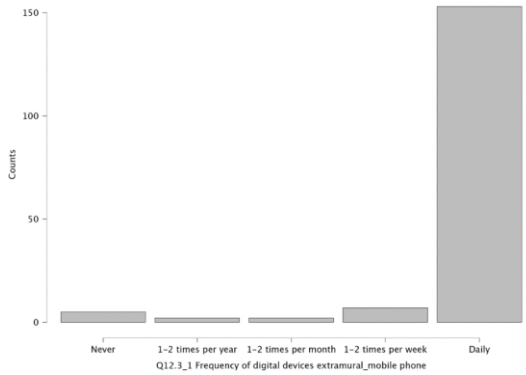


PUBLIC SETTING

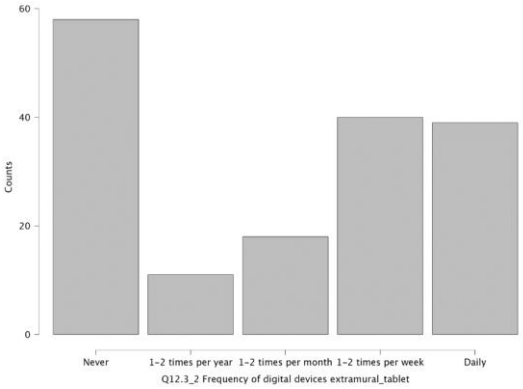


Among the **devices used for extramural activities**, students preferred mobile phones, laptops, and smart TVs. The following histograms show how often they used each device.

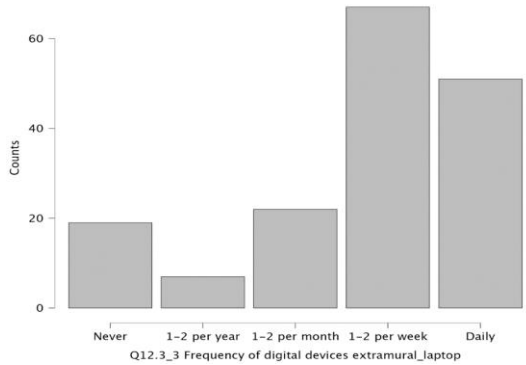
MOBILE PHONE



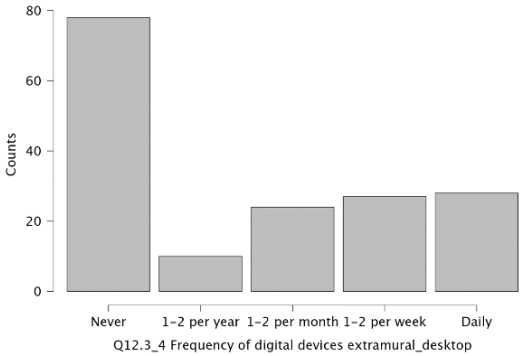
TABLET



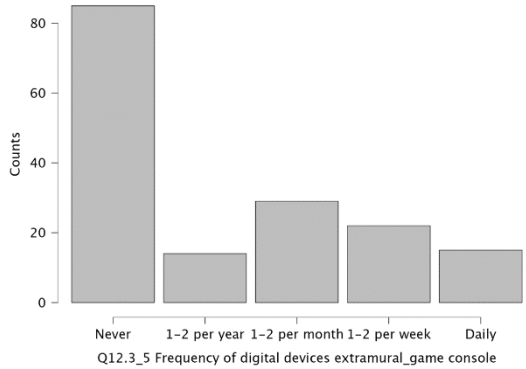
LAPTOP



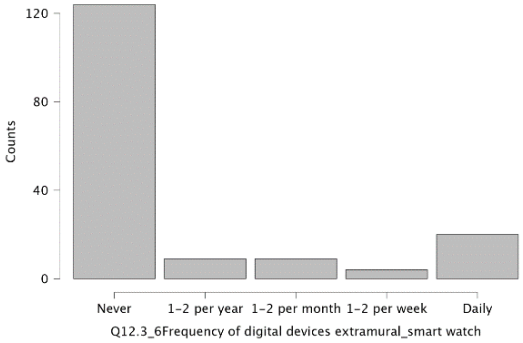
DESKTOP



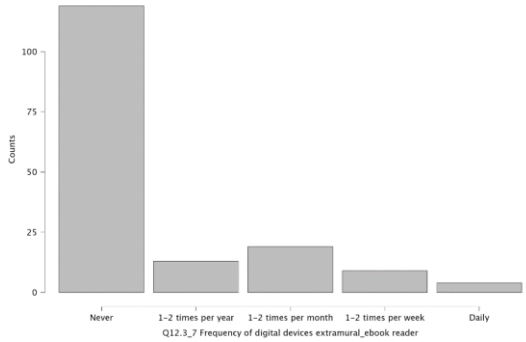
GAME CONSOLE



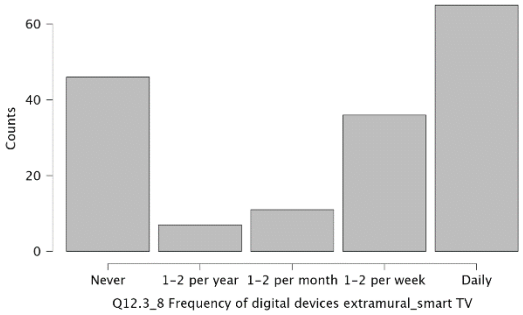
SMART WATCH



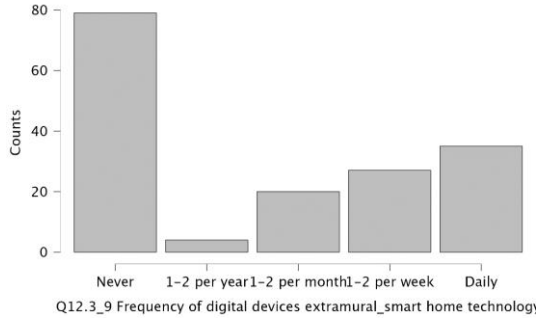
EBOOK READER



SMART TV

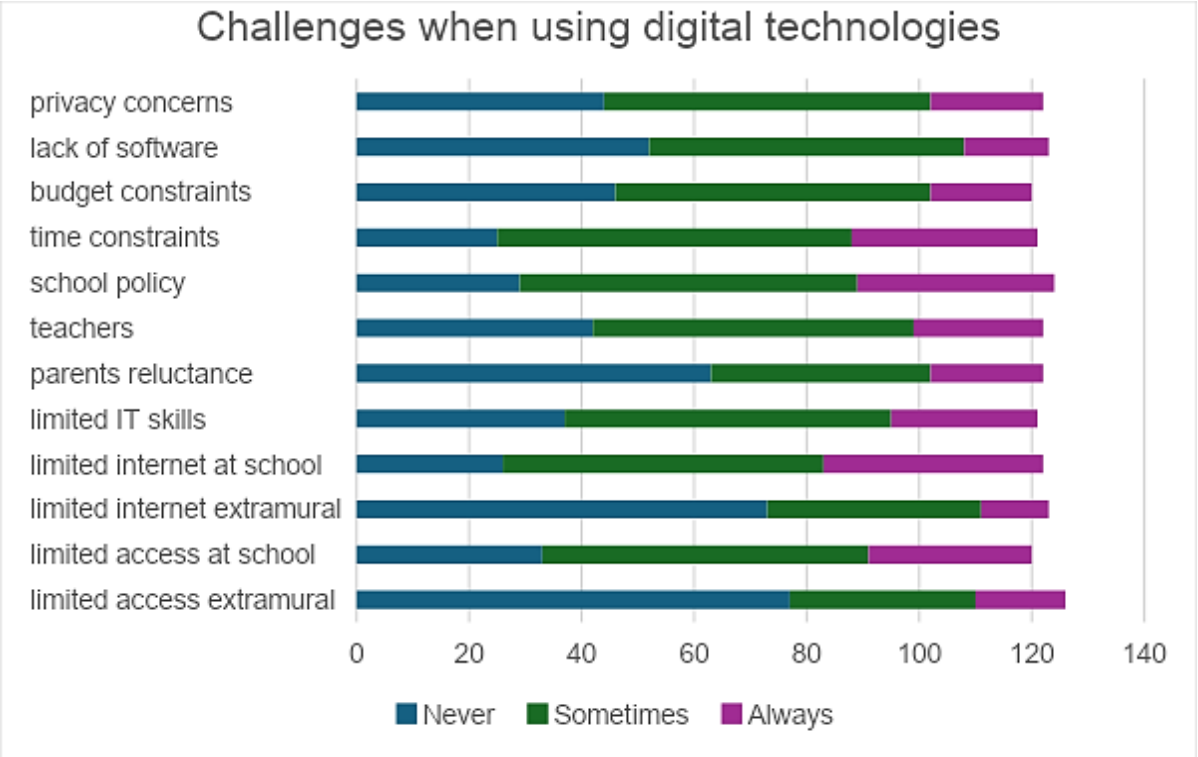


SMART HOME TECHNOLOGY



1.7. Challenges when using digital technologies

In our sample of participants, limited extramural access at home to both the internet and digital devices was never a problem. The **challenges** that students seemed to face more often were related to limited internet access at school and school policy related to technology use.



2. Digital Literacies Teacher Survey (DLTS): Italy

2.1. Introduction

CLIL in Italy is mandatory in upper secondary schools, and recently, the Italian Ministry of Education and Merit has promoted its introduction starting from primary and even pre-primary schools. The Reform Law mandating the inclusion of CLIL methodology in upper secondary school curricula dates back to 2003 and was implemented in 2010. This initiative was highlighted in the 2019 Council Recommendation on a comprehensive approach to the teaching and learning of languages, where it was cited as a case study. Italian policymakers adopted a democratic and inclusive approach, ensuring that CLIL was accessible to every student in each class where it was implemented, regardless of their proficiency level in the foreign language.

The introduction of CLIL marked a significant shift, reinforcing the perception of CLIL as a catalyst for innovation that influenced all stakeholders within a school community. The decision by policymakers to incorporate the teaching of non-linguistic subjects (commonly referred to as 'DNL') through a foreign language in the final year of upper secondary education underscores the Ministry's recognition of CLIL's potential to enhance the quality of school curricula and better address the challenges of the 21st century. This initiative represents a clear departure from traditional teacher-centred instruction towards learner-centred methodologies, a core innovation inherent in CLIL approaches.

Recent developments have expanded CLIL to all school levels, with specialised training programs now available for primary and pre-primary teachers. A CLIL teacher is typically a subject specialist (in either STEM or humanities) who has obtained a certificate in a foreign language (C1 level for secondary school teachers and B2 level for primary and pre-primary teachers) and has completed a 20-credit university post-graduate course in CLIL methodology. The Ministry of Education and Merit strongly advocates for collaboration between CLIL teachers and language teachers or assistants within the same class or school to foster cooperation and the exchange of expertise (the so-called 'CLIL team').

A CLIL teacher's profile is characterised by three interwoven dimensions of competence: language proficiency, subject expertise, and methodological skills, making the role highly specialised and qualified.

The following dimensions for CLIL training pathways are generally provided:

- **Basic training activities**: cover theoretical and methodological aspects that are foundational to subsequent training components.
- **Specialised training activities**: focus on delivering subject content in a foreign language using active learning methodologies and laboratory work to achieve genuine integration between language and subject content.

- **Practicum through Action-Research**: includes in-class practice and culminates in a final examination.

The Ministry of Education and Merit recommends that approximately 50% of a subject's contact hours be taught in a foreign language. Additional recommendations include fostering collaboration between schools through networks and integrating multimedia, digital devices, and digital content to enhance the effectiveness of CLIL lessons (for further details about CLIL provision in Italy see Cinganotto, 2016).

The survey was administered to a sample of Italian CLIL teachers who had completed their CLIL training, obtaining a certificate in a foreign language and a postgraduate university course specialising in CLIL methodology. These teachers instructed one or more subjects in a foreign language, predominantly English. They hailed from various regions of Italy and were contacted through a mailing list compiled by Letizia Cinganotto, co-moderator of a large CLIL network called 'Techno-CLIL' (for further details about Techno-CLIL community see: Cinganotto & Cuccurullo, 2018). The data analysed in this report are based on 57 responses.

2.2. Summary of main findings

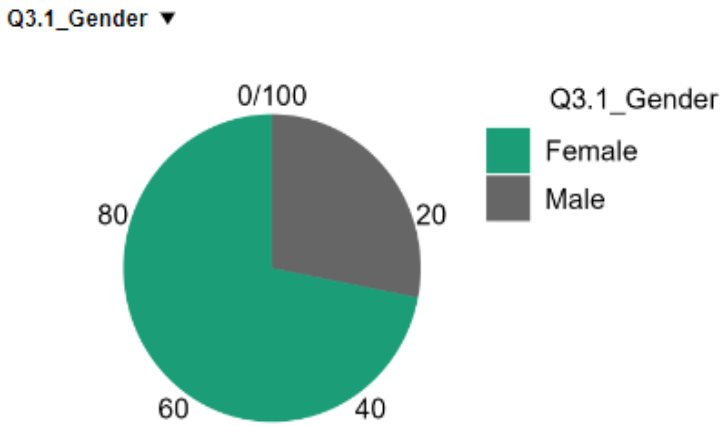
- **Tools used**: Desktops and laptops were the most commonly used tools for educational purposes, with both being utilized more in the classroom than for personal use. For both personal and educational activities, laptops, mobile phones, tablets, and desktops were frequently employed.
- **Technology use in CLIL classes**: The data showed that projectors and whiteboards were utilized in every CLIL class. These were followed by online research platforms and virtual learning environments, which were used as frequently as e-textbooks.
- **Time spent using technology**: On average, approximately 25 minutes were dedicated to the use of technology during CLIL lessons.
- **Perception of technology use**: Teachers reported a moderate level of technology integration in their teaching practices.
- **Challenges with technology**: A significant 68% of teachers encountered challenges when using technology in the classroom.
- **Technology and multilingual learning**: Teachers generally agreed that technology could enhance bilingual and multilingual learning. They also emphasized the importance of understanding how students engaged with technology.
- **Awareness of Critical Digital Literacies (CDLs)**: Only 22% of teachers were familiar with Critical Digital Literacies (CDLs). Among those who were aware, many reported that they 'often' incorporated CDLs into their teaching practices.

Note the following:

- Participants 51 of the Italian dataset has been removed due to a response anomaly.
- 11 respondents did not complete the questionnaire.

2.3. Participant background

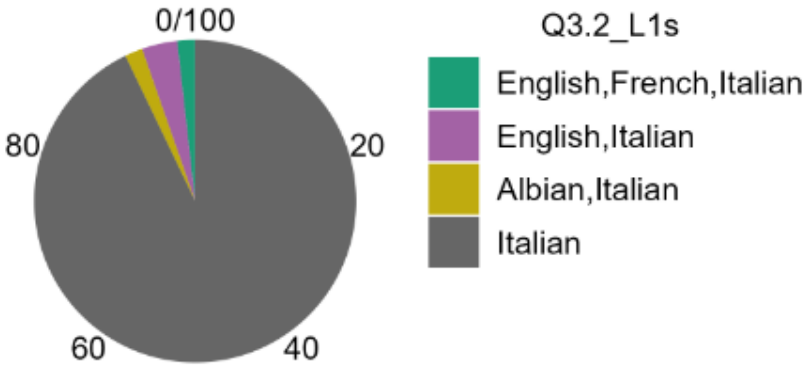
The following figure illustrates the **gender** of the teachers involved in the survey: 72% were female and 28% were male.



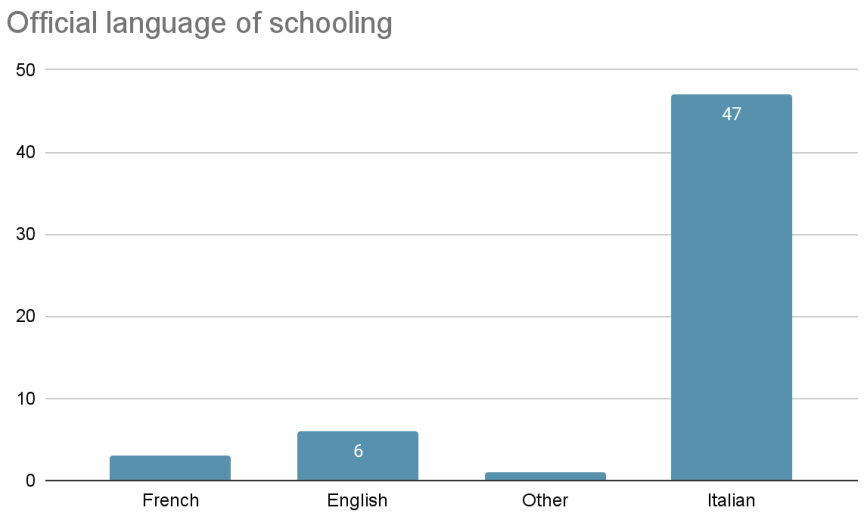
Frequencies for Q3.1_Gender

Q3.1_Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	41	71.930	71.930	71.930
Male	16	28.070	28.070	100.000
Missing	0	0.000		
Total	57	100.000		

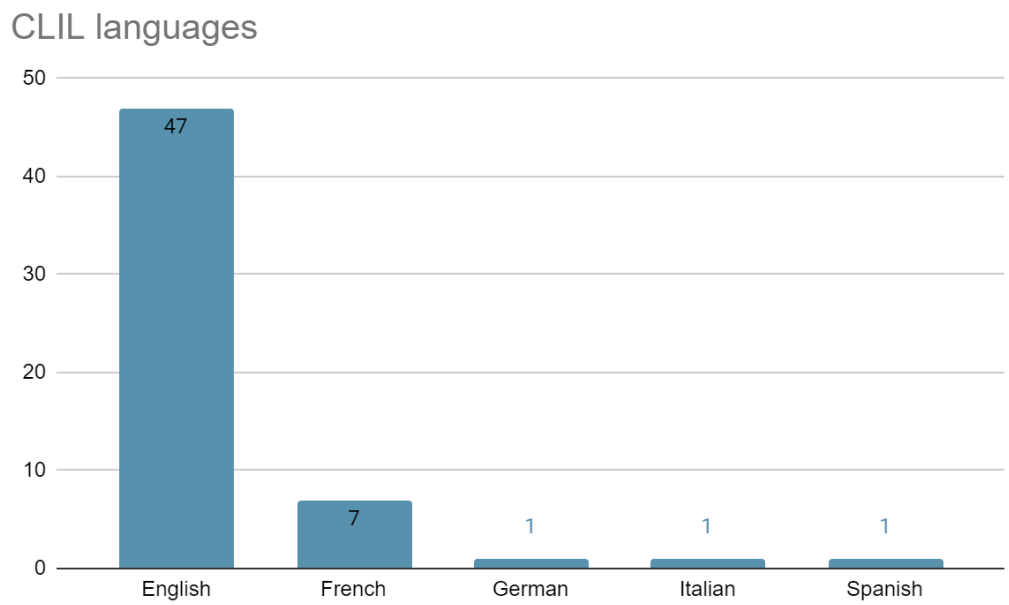
As the following results indicate, the majority of the teachers were monolingual in Italian (52 respondents). The remaining bi/multilingual teachers reported various L1 combinations, as depicted in the pie chart below.



The histogram below illustrates the **official languages of instruction**, with Italian being the most common, as indicated by 47 responses.

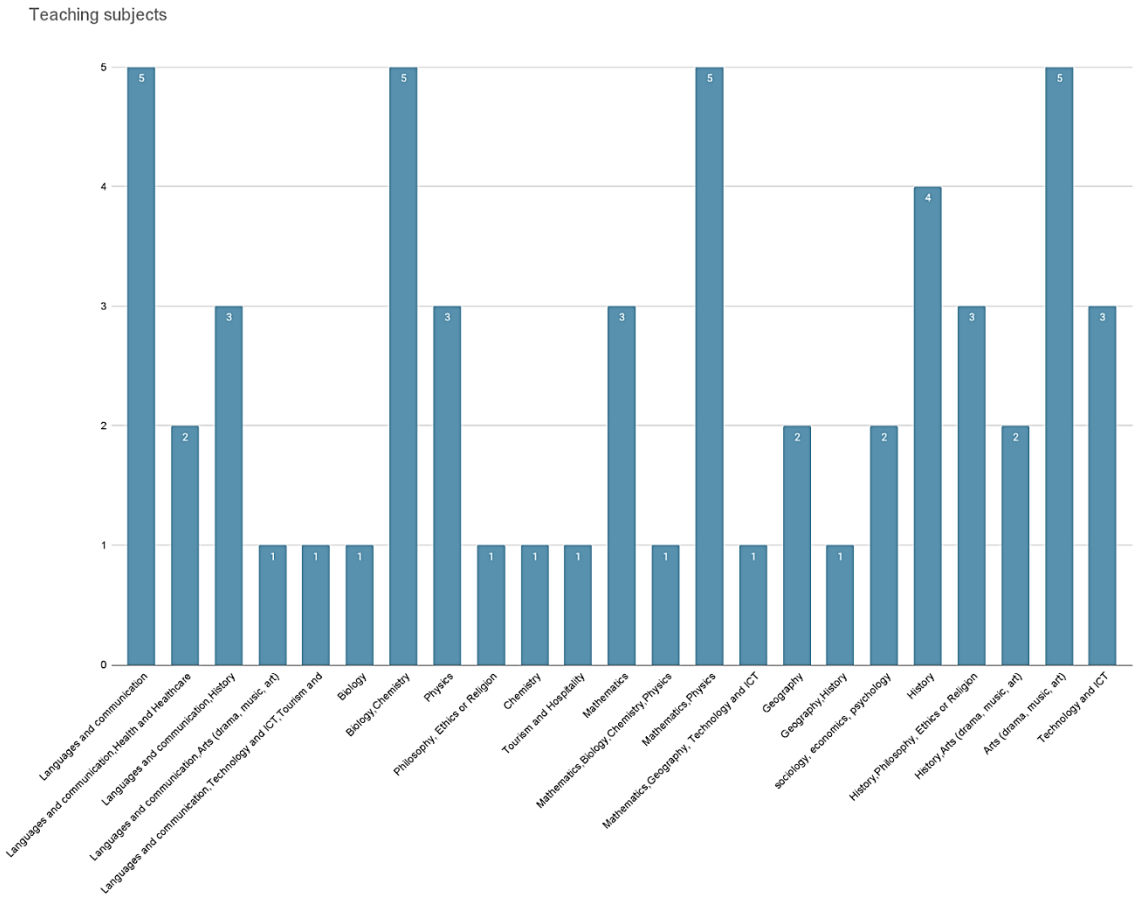


When asked about the **primary languages used in CLIL lessons**, the majority of teachers identified English as the main language of instruction. Seven teachers mentioned French, while only one teacher reported using Spanish, German, and Italian (as a second/foreign language).

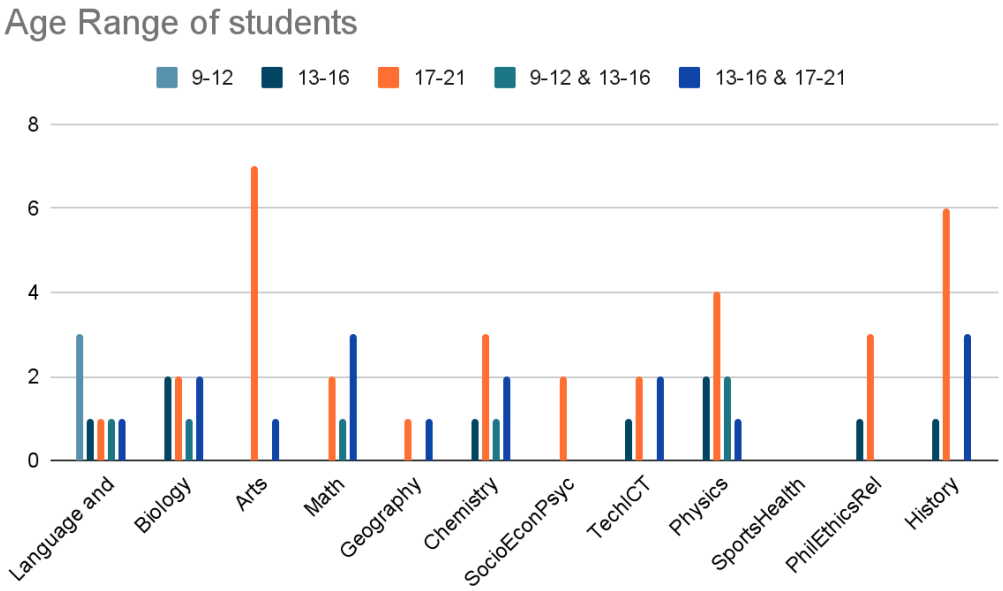


The following results indicate a broad range of **subjects** being taught.

- The histogram below highlights that the most frequently reported subjects were Language and Communication, Biology and Chemistry, Mathematics and Physics, and Arts, each receiving a score of 5.
- History followed with 4 responses.
- Subjects such as Language and Communication, History, Physics, Mathematics, Philosophy, Ethics or Religion, and Technology and ITC each received a score of 3.
- Health and Healthcare, Geography, Sociology, Economics, Psychology, History, and Art were reported with a score of 2.
- The remaining subjects each received a score of 1.



Teachers were asked to specify the **age range of students** for each subject mentioned above, as depicted in the histogram below. The majority of respondents teach at the high school level, particularly in the final years, where CLIL is mandatory.



Teachers were asked to indicate their **teaching experience**, which in the case of the Italian teachers ranged from 1 to 35 years. The table below presents the descriptive statistics for this variable. As shown, the median teaching experience was 17 years.

Descriptive Statistics ▼

	Q3.16_Years_Tg
Valid	57
Missing	0
Mean	18.316
Std. Deviation	10.553
Minimum	1.000
Maximum	35.000

Similar to their overall teaching experience, teachers reported varying **years of experience with CLIL**, ranging from 1 to 30 years. The table below presents the descriptive statistics for this variable. The frequency table indicates that the most common durations of CLIL experience were 1 year, 5 years, and 8 years. This distribution suggests that there is a broad and balanced level of training among CLIL practitioners.

Descriptive Statistics

Descriptive Statistics

	Q3.17_Years_CLILTg
Valid	48
Mean	6.854
Std. Deviation	6.014
Coefficient of variation	0.877
MAD	3.000
MAD robust	4.448
IQR	6.000
Variance	36.170
Range	29.000
Minimum	1.000
Maximum	30.000
25th percentile	3.000
50th percentile	5.000
75th percentile	9.000

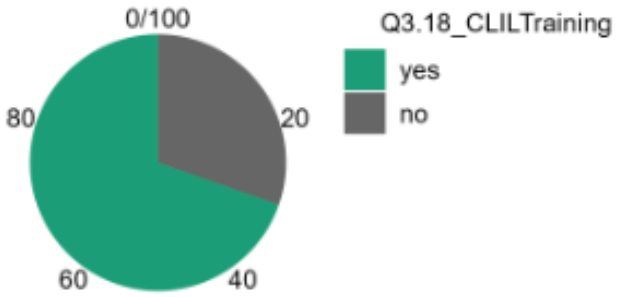
Frequency Tables

Frequencies for Q3.17_Years_CLILTg

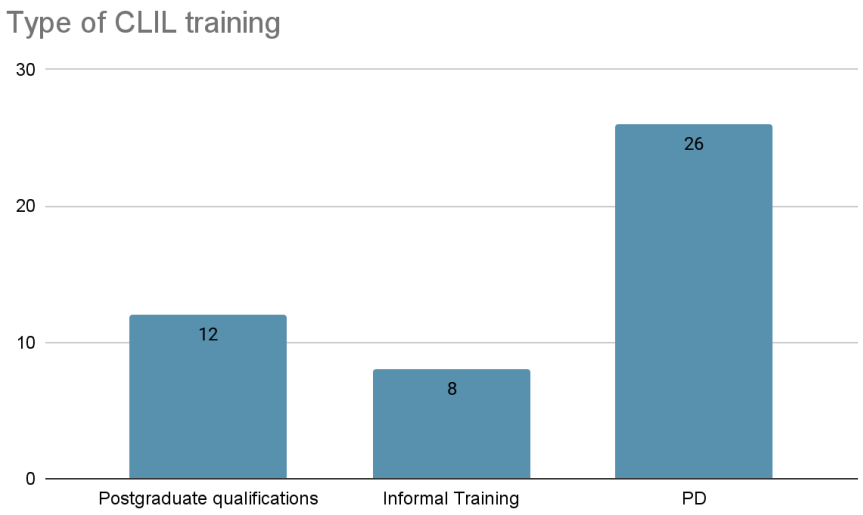
Q3.17_Years_CLILTg	Frequency	Percent	Valid Percent	Cumulative Percent
1	8	14.035	16.667	16.667
2	3	5.263	6.250	22.917
3	4	7.018	8.333	31.250
4	4	7.018	8.333	39.583
5	6	10.526	12.500	52.083
6	3	5.263	6.250	58.333
7	1	1.754	2.083	60.417
8	6	10.526	12.500	72.917
9	2	3.509	4.167	77.083
10	4	7.018	8.333	85.417
12	2	3.509	4.167	89.583
13	1	1.754	2.083	91.667
15	1	1.754	2.083	93.750
18	1	1.754	2.083	95.833
26	1	1.754	2.083	97.917
30	1	1.754	2.083	100.000
Missing	9	15.789		
Total	57	100.000		

Regarding **CLIL training**, the majority of participants reported having received some form of training, with about 68% indicating ‘yes’ and about 29% indicating ‘no’.

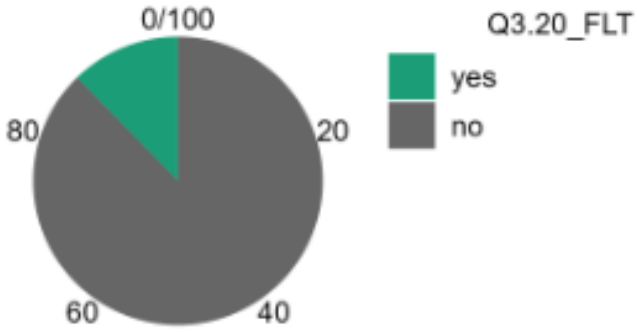
Q3.18_CLILTraining



Furthermore, as illustrated by the chart below, the majority of **training in CLIL methods** came from professional development (PD) programs, followed by postgraduate qualifications.



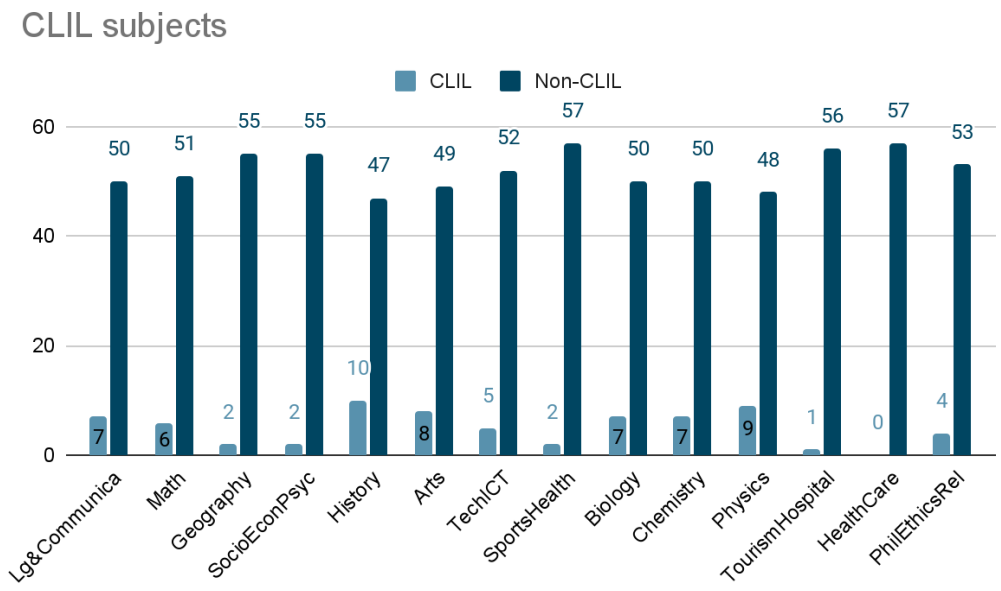
As shown in the chart below, the majority of participants were not **foreign language teachers**, with only 12% identifying as such (12.281% = 'yes', 87.719% = 'no'). This aligns with Italian regulations on CLIL methodology, which predominantly involve subject teachers ('DNL' teachers) who are specifically trained and specialised in CLIL instruction.



English was the most commonly taught **foreign language** among these participants, with 5 instances recorded. It was followed by French, which was taught in 3 instances, and Albanian, which was taught less frequently.

2.4. Participants' CLIL teaching experience

The histogram below displays the **subjects taught by participants in both CLIL and non-CLIL languages**. History was the most frequently taught subject in a CLIL language, with 10 reports, followed by Physics with 9 reports and Arts with 8 reports. Other subjects include Language and Communication, Biology, and Chemistry, each with 7 reports; Mathematics with 6 reports; Technology and ICT with 5 reports; and Philosophy, Ethics or Religion with 4 reports. Geography, Socio-Economics, and Psychology each had 2 reports, while Tourism and Hospitality had 1 report.



The following question addressed the **objectives of CLIL teaching and learning** in the classroom. Participants were asked to rate whether their lessons were more language-oriented (1) or content-oriented (100) on a scale from 1 to 100.As shown in the table below, teachers indicated that their lessons were more focused on content rather than language, with a median score reflecting this emphasis. This aligns with the core principles of CLIL frameworks, which emphasise meaning-making and the co-construction and negotiation of content over a strict focus on form and accuracy.

Descriptive Statistics

	Q3.14_CLIL_TgAims_Lg-Content
Valid	54
Missing	3
Mode	100.000[a]
Median	76.000
Mean	69.796
Std. Deviation	23.639
MAD	13.000
Minimum	0.000
Maximum	100.000

[a] The mode is computed assuming that variables are discreet.

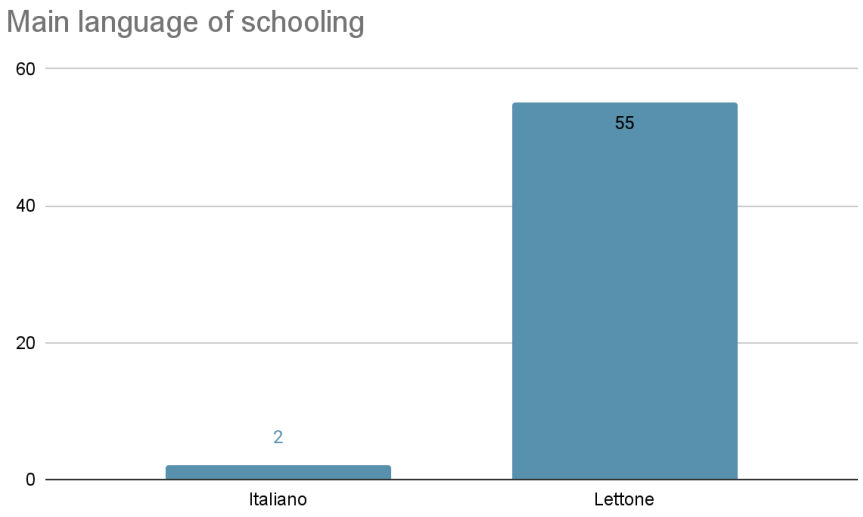
Teachers were asked to describe the **use of language in their lessons** by selecting a degree of language use on a scale from 1 to 100, where 1 indicated a multilingual approach and 100 indicated exclusive use of the CLIL language. As shown in the table below, the use of the target language was primarily oriented towards the CLIL language, with an average score of 61.167. This reflects the current situation in Italian schools, where multilingual approaches are still relatively uncommon, except in schools that have adopted specific multilingual pedagogy projects.

Descriptive Statistics

	Q3.15_LginCLIL_Biling-TargetLg
Valid	54
Missing	3
Mean	61.167
Std. Deviation	27.270
Minimum	0.000
Maximum	100.000

2.5. Participants' school environment

When analysing the variable related to the **main language of schooling**, our team identified some anomalies: a notable number of participants reported Latvian as the primary language of instruction. Given the context of this study, which focuses on Italian schools, we assume this response is due to a technical error, particularly since Latvian and Italian are listed close together on the survey. Based on this consideration, we have concluded that the responses indicating Latvian should be treated as if they were referring to Italian.



In the question about the percentage of **bi/multilingual students** in their school, teachers were asked to specify the percentage of students who spoke more than one language as their native language (L1). As shown in the table below, the average percentage of bilingual or multilingual students was approximately 22%.

Descriptive Statistics ▼

	Q4.9_%BiMultilingStudents
Valid	47
Missing	10
Mode	10.000[a]
Median	19.000
Mean	21.745
Std. Deviation	15.713
MAD	10.000
IQR	20.000
Range	71.000
Minimum	0.000
Maximum	71.000

[a] The mode is computed assuming that variables are discreet.

2.6. Use of digital tools in CLIL

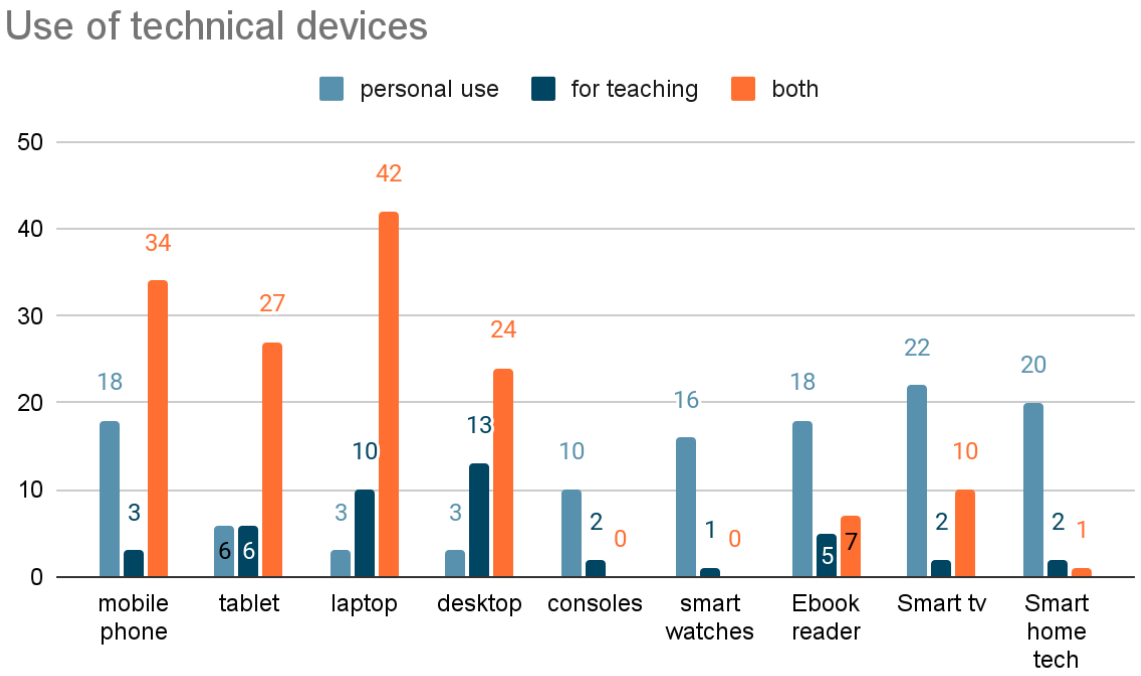
To understand the **use of technical devices**, teachers reported their usage for personal purposes, for school, or for both.

As illustrated in the table and histogram below, the most frequently used devices for personal purposes only were smart TVs (38%), followed by smart home technologies (35%), and mobile phones (31%). For teaching purposes, desktop computers (22%) and laptops (17%) were used more frequently than for personal use.

When considering both personal and professional applications, the most commonly reported devices were laptops (73%), mobile phones (59%), tablets (47%), and desktops (42%). Other devices were used less frequently, with percentages below 20%. Notably, no participants reported using consoles for either personal or school-related purposes.

Technical device	Personal use %	For teaching %	Both %
Mobile Phone	31.579	5.263	59.649
Tablet	10.526	10.526	47.368
Laptop	5.263	17.544	73.684

Desktop	5.263	22.807	42.105
Consoles	17.544	3.509	0
Smart Watch	28.070	0	1.754
Ebook Reader	31.579	8.772	12.281
Smart TV	38.596	3.509	17.544
Smart Home Tech	35.088	3.509	1.754



The table below details the frequency with which participants **used various digital technology devices and tools in the CLIL language**, based on a 5-point scale: 1 (‘never’), 2 (‘a few times per term’), 3 (‘a few times per month’), 4 (‘a few times per week’), and 5 (‘every lesson’).

The results indicate that digital projectors and whiteboards were used in every lesson, with a median score of 5. Online research, virtual learning platforms, and e-textbooks were utilised several times per week, with a median score of 4. Video sharing platforms had a median score of 3, indicating usage ‘a few times per month’. Digital storytelling, content creation, free education apps, games, and online course platforms each had a median score of 2, reflecting usage ‘a few times per term’. All other technologies had a median score of 1, indicating they were rarely used.

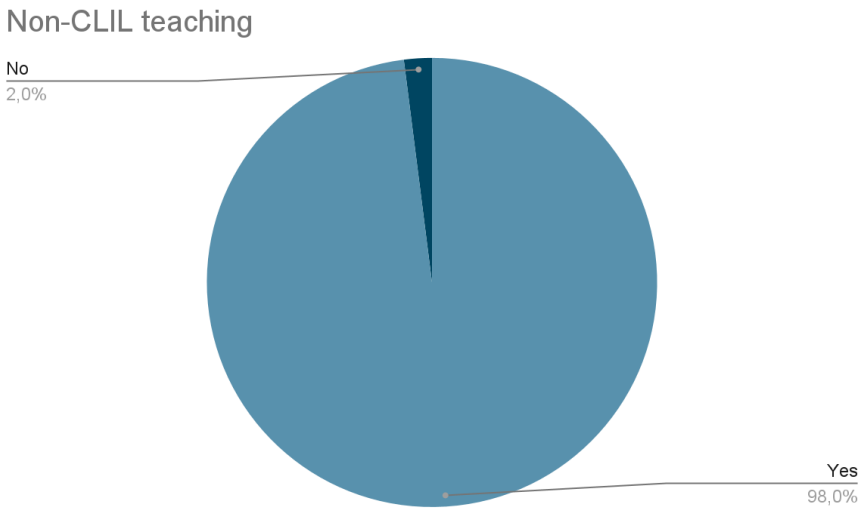
	Median	IQR
Social Media	1.000	1.000
Multi-Player Games	1.000	0.000
Instant Messaging	1.000	2.000
Video Streaming	1.000	1.000
Mobile Phone Apps	1.000	1.000
Online Video Sharing	3.000	1.000
Online Research Virtual Learning Platforms	4.000	1.000
VR & AR	1.000	1.000
Online Shopping	1.000	0.000
Mobile Photo	1.000	1.000
Digital Storytelling & Content Creation	2.000	2.000
Online Forums Discussion Boards	1.000	1.000
Free Education Apps Games	2.000	2.000
Paid Education Apps Games	1.000	0.000
Online Music Streaming Downloading Services	1.000	1.000
Ebook Readers Digital Book Platforms	1.500	2.000
AI	1.000	1.000
EtextBooks	4.000	2.000
Digital Projector Whiteboard	5.000	1.000
Single Player	1.000	0.000
Online Courses platforms	2.000	2.000
Digital Reading Devices	1.000	2.000
Online Shopping	1.000	0.000

The table below shows the **time spent on digital technologies during CLIL lessons**, expressed in minutes. The average reported time is approximately 25 minutes.

Descriptive Statistics

	Median	Mean	Std. Deviation	Coefficient of variation	IQR	Variance	Range	Minimum	Maximum
Q6.7_Time_DigTech_CLIL	20.000	25.714	26.300	1.023	15.000	691.667	185.000	5.000	190.000

As shown in the chart below, the majority of participants also taught **non-CLIL subjects**, with 98% indicating this in their responses. This aligns with Italian regulations on CLIL, which stipulate that a CLIL teacher is a subject specialist who teaches their subject primarily in Italian, incorporating the foreign language as part of the CLIL approach.



For participants who indicated that they also taught non-CLIL subjects, we asked whether their **use of technology differed between CLIL and non-CLIL classes**, using a scale from 0 to 100 (where '0' represented no difference and '100' represented a substantial difference). As shown in the table below, the average score was 44%, suggesting that participants perceived a moderate difference in technology use between CLIL and non-CLIL classes. The standard deviation indicates significant variability in these perceptions.

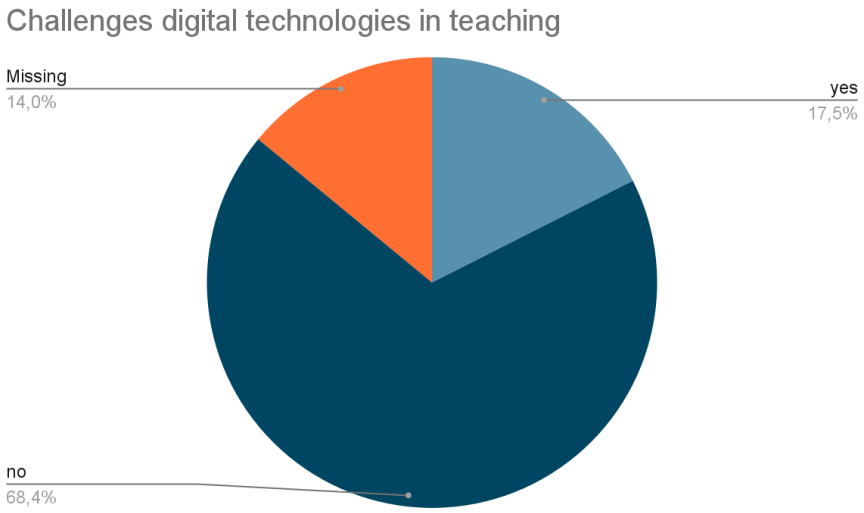
Difference in digital technologies use	
Valid	28
Missing	29
Mean	44.464
Std. Deviation	26.100
Minimum	0.000
Maximum	89.000

2.7. Teachers' competences and challenges

To assess **participants' competence levels with digital tools for feedback**, they were asked to self-report their knowledge using a 4-point scale: '1' (never heard of it), '2' (beginner), '3' (average), and '4' (expert). As shown in the table below, all teachers rated themselves with a median score of 3, indicating that they considered themselves to be 'average' users of these digital tools.

		Median	IQR
Statement 1	I integrate effectively technology into my teaching and learning including videos, images, interactive elements	3.0	1.000
Statement 2	I select digital resources, tools or platforms appropriately	3.0	1.000
Statement 3	I align my use of digital tools and resources with specific learning objectives	3.0	0.000
Statement 4	I encourage and facilitate communication and collaboration between students using digital technologies	3.0	0.000
Statement 5	I assess students and provide feedback to students using digital tools	3.0	1.000
Statement 6	I evaluate my own digital strengths and weaknesses easily	3.0	0.000
Statement 7	I adapt teaching, learning and assessment using digital technologies to ensure that learning experiences are inclusive	3.0	1.000

The pie chart below illustrates the experiences of teachers with **challenges in implementing digital technologies**. It shows that 68% of participants faced challenges, 17% did not encounter any issues, and 14% did not provide a response.

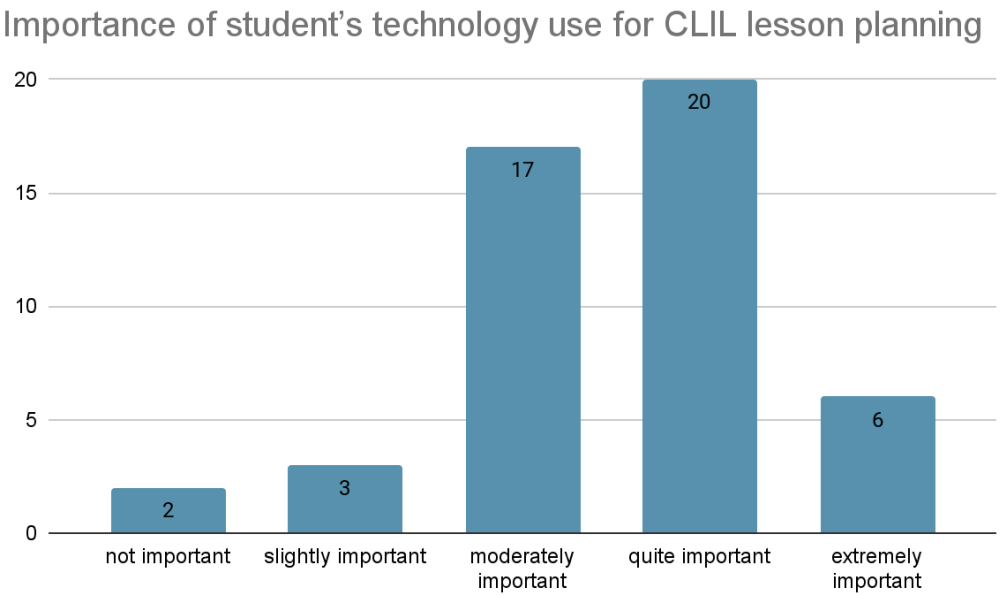


2.8. Teachers' perceptions of digital technologies in CLIL

Teachers were asked to rate their agreement with three statements regarding their **beliefs and perceptions of technology use** on a 5-point scale: '1' (strongly disagree), '2' (somewhat disagree), '3' (neither agree nor disagree), '4' (somewhat agree), and '5' (strongly agree). The table of general descriptive statistics below indicates that teachers generally held positive beliefs about the impact of technology on enhancing learning and motivation.

	Median	Mean	IQR
Students' disciplinary literacy skills improve when incorporating technology into CLIL learning	4.0	3.755	1.000
Using technology encourages students to be more multilingual in their learning	4.0	3.867	1.000
Students are inherently more motivated to use language and content in an integrated way (i.e., project work) when a digital tool or technology is required to complete it	4.0	3.956	1.000

The following chart shows the **importance of understanding students' use of technologies outside of the school** while teachers design practices for the CLIL classroom. Most of participants rated it as 'quite important' in a 5-level ordinal scale ('1'= not important; '2'= slightly important; '3'= moderately important; '4'= quite important; '5'= extremely important)



The teachers were asked to determine whether the score reflects primarily basic language skills or more advanced bilingual/multilingual disciplinary literacy in a scale of literacy skill (scores closer to 100) or simply language skills (scores closer to 0). With a median of 50, we can assume a strong foundation in both basic language skills and emerging bilingual/multilingual disciplinary literacy, with the potential for further growth.

Relevance of technology for CDLS or skills	
Valid	35
Missing	22
Median	50.000
Mean	48.571
Std. Deviation	25.671
Coeficient of variation	0.529
Range	90.000
Minimum	0.000
Maximum	90.000

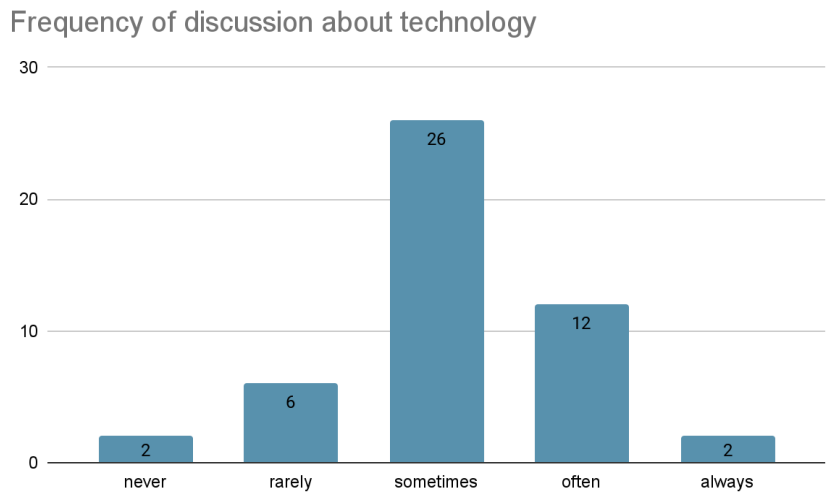
2.9. Students' digital competences: teachers' perceptions

When teachers were asked how frequently they **discussed technology use outside of school with their students**, most reported that they did so occasionally. Responses were rated on a 5-point scale: '1' (never), '2' (rarely), '3' (sometimes), '4' (often), and '5' (always). The median response was 3.0, with an interquartile range (IQR) of 1.0. The histogram below shows the detailed distribution of these responses.

Descriptive Statistics ▼

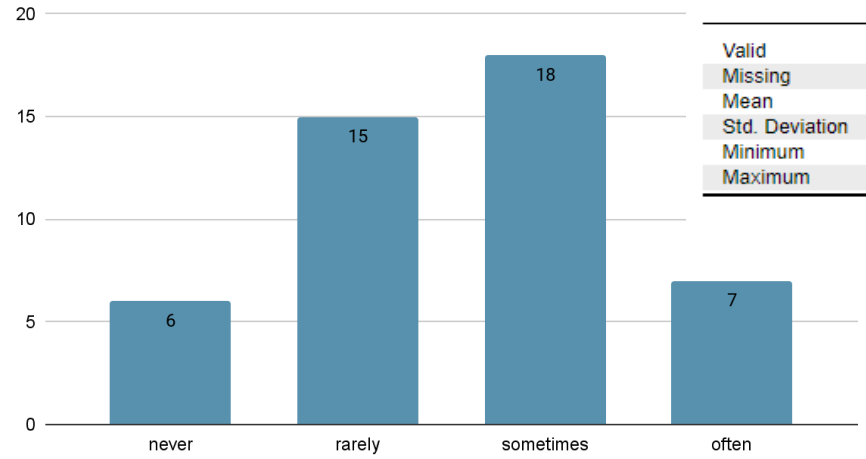
	Valid	Missing	Mode	Median	Mean	Std. Deviation	Minimum	Maximum
Q8.1_TechDiscussion_Freq	48	9	3.000▪	3.000	3.125	0.841	1.000	5.000

▪ The mode is computed assuming that variables are discreet.



Teachers were asked how often they **explicitly connected discussions to CLIL learning**. The responses were rated on the same 5-point scale as in the previous question. The table

and histogram below show that the median response was 3, indicating that teachers occasionally make this connection in their classrooms.



Descriptive Statistics

	Q8.2_TechCLIL_makelinkexplicit
Valid	46
Missing	11
Mean	2.565
Std. Deviation	0.910
Minimum	1.000
Maximum	4.000

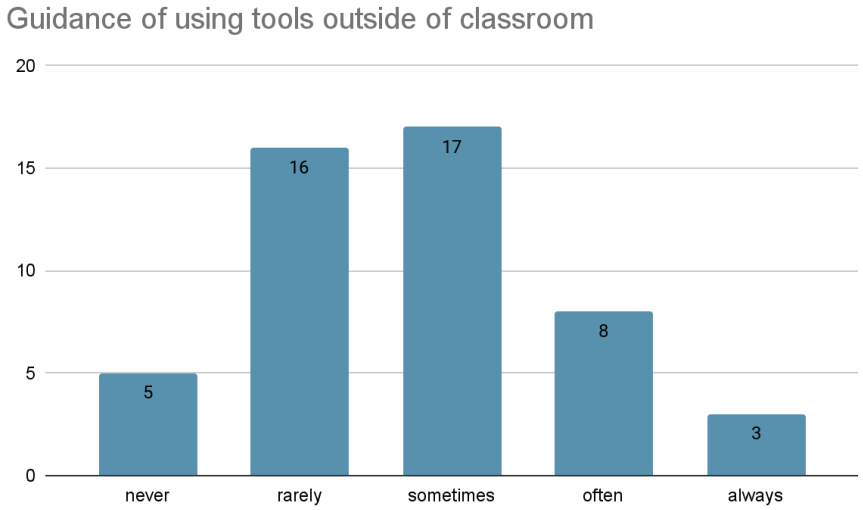
When teachers were asked if they provided **guidance or suggestions on using technology outside of the school environment**, the median response was 3.0, which corresponds to 'sometimes' on the 5-point scale used for previous questions. Notably, the 'rarely' response received only one response less than 'sometimes,' indicating a close fluctuation between these two levels of guidance.

Descriptive Statistics

	Valid	Missing	Median	Std. Deviation	Coefficient of variation	Range	Minimum	Maximum
Q8.9_T_Guidance_extramuraluse	49	8	3.000	1.051	0.382	4.000	1.000	5.000

Frequencies for Q8.9_T_Guidance_extramuraluse

Q8.9_T_Guidance_extramuraluse	Frequency	Percent	Valid Percent	Cumulative Percent
never	5	8.772	10.204	10.204
rarely	16	28.070	32.653	42.857
sometimes	17	29.825	34.694	77.551
often	8	14.035	16.327	93.878
always	3	5.263	6.122	100.000
Missing	8	14.035		
Total	57	100.000		



2.10. Students' extramural use of digital technologies: teachers' perceptions

The following table presents the percentage of teachers who reported **students' use of various technology tools** within the selected age group (17 to 21). The data shows how frequently teachers think that students engage with each tool. For the following analysis, we selected the age group 17 to 21 due to its larger data set. Teachers were asked about their perceptions of students' use of technology outside of school. The data, presented in descending order, show the following percentages:

Technology Tool	Percentage of Teachers Reporting Students' Use
Social Media	59.649%
Mobile Apps	57.895%
Instant Messaging	57.895%
Video Streaming	56.140%
Online Video Sharing	54.386%
Online Shopping	50.877%
Online Gaming	45.614%
Mobile Photography	40.351%
Online Research	35.088%
Digital Content Creation	31.579%
Online Discussion Forums	19.298%
VR & AR	12.281%

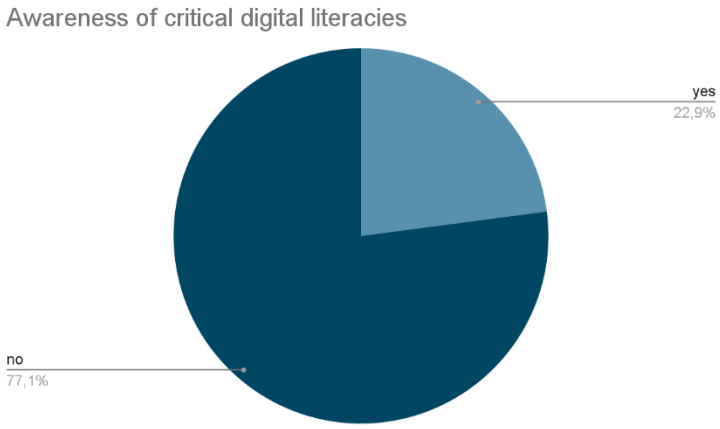
In sum, teachers perceived that student predominantly used social media, mobile apps, instant messaging, video streaming, and video sharing. There was also significant recognition of online shopping, gaming, and mobile photography. In contrast, activities such as online research, content creation, online discussion forums, and VR/AR tools were reported less frequently. These findings highlight the need to guide students towards enhanced digital literacy and to foster a deeper awareness of how to critically and effectively use digital tools, not only for CLIL but for learning in general.

SocialMedia	34	59.649
Gaming	26	45.614
InstantMessaging	33	57.895
VideoStreaming	32	56.140
MobileApps	33	57.895
OnlineVideoSharing	31	54.386
OnlineResearch	20	35.088
VR&AR	7	12.088
OnlineShopping	29	50.877
MobilePhoto	23	40.351
DigitalStoryContent	18	31.579
OnlineForums DiscussionBoard	11	19.298
EducAppsGames	13	22.807
OnlineMusicStreaming	29	50.877
Ebookreaders	14	24.56
AI	21	36.842

2.11. The teaching of Critical Digital Literacies in CLIL

The pie chart below presents the results of a question of the survey exploring whether teachers are familiar with the concept of **Critical Digital Literacies** (CDLs). The data revealed that only 22% of teachers had heard of CDLs, while a significant 77% were unfamiliar with the concept.

This suggests a clear need for more training initiatives focused on CDLs to better equip teachers with the necessary knowledge and skills.



At the end of the survey, teachers were asked to rate how frequently they **incorporate Critical Digital Literacie**s (CDLs) into their CLIL teaching, using a 5-point ordinal scale (‘1’ = never; ‘2’ = rarely; ‘3’ = sometimes; ‘4’ = often; ‘5’ = always). The data revealed a median rating of 4, indicating that teachers ‘often’ integrated CDLs into their CLIL lessons.

These results appear somewhat inconsistent with the findings from the previous question. However, this could suggest that while teachers may incorporate digital literacies into their CLIL teaching, they might not always have a clear understanding of the critical aspects of these literacies or their intentional application.

	Median	Mean	Std. Deviation	IQR
Assess the credibility, accuracy and reliability of online information	4.000	3.818	1.168	2.000
Analyse and interpret media bias, understand persuasive techniques (i.e. photo editing, decontextualized images), examine stereotypes (i.e. stereotypical images of masculinity).	4.000	3.444	1.878	4.000
Discuss issues related to online privacy, cyberbullying, digital footprint and responsible online behaviour	4.000	3.222	1.787	4.000
Discuss how to be safe online	4.000	3.444	1.014	1.000
Use digital technologies to foster communication, collaboration and knowledge sharing	4.000	3.333	1.225	1.000
Using technology to solve problems	4.000	4.111	0.782	1.000
Discuss the principles of copyright, piracy	4.000	3.667	0.707	1.000
Encourage students to reflect on their own digital skills.	3.000	2.889	1.364	2.000

References

Cinganotto L. (2016). CLIL in Italy: a general overview. Latin American Journal of Content and Language Integrated Learning, 9(2), 374-400. doi:10.5294/laclil.2016.9.2.6 (https://laclil.unisabana.edu.co/index.php/LACLIL/article/view/7177).

Cinganotto L., Cuccurullo D. (2018). Techno-CLIL – Fare CLIL in digitale. I Quaderni della Ricerca, n. 42, Loescher (https://www.loescher.it/dettaglio/opera/O_3840/42--Techno-CLIL).