

Project Title: Digital applications for teaching reading and narrative skills in multilingual Greek primary school classes

Project Logo:

D_Read-Narrate
Digital READING & NARRATION for BILINGUALS



Subject: WP1 Analysis and specification of requirements

Table of contents

1. EXECUTIVE SUMMARY	3
2. USER REQUIREMENTS - DATA COLLECTION	3
2.1. Interviews	4
2.1.1. Methodology	4
2.1.2. Results	6
2.1.3. Conclusion	13
3. REFERENCES	14
4. APPENDIX	14
4.1. Adults' questionnaire	14
4.2. Students' questionnaire	18

1. EXECUTIVE SUMMARY

The aim of the D_Read-Narrate project is to develop a set of pedagogical web applications that improve the language skills of primary school students learning Greek as a second language (L2). Specifically, the project aims to assist grammatical and vocabulary knowledge, as well as reading and narrative skills of monolingual and sequential bilingual students aged 8 to 12 who are learning Greek as L2.

Work Package 1 (WP1) includes the user requirements/needs specification phase, aiming to determine the pedagogical needs of the populations targeted by the designed software, namely bilingual (and monolingual) primary school students and their teachers. The project team conducted this small-scale study to identify user needs using short interviews, which enabled the team to design the learning applications and activities that will be integrated in the D_Read-Narrate software. This deliverable describes the results of an analysis of the interviews with teachers teaching in Greek Primary schools and interviews with bilingual and monolingual students.

2. USER REQUIREMENTS – DATA COLLECTION

D_Read-Narrate aims to address language and reading skills in first and second language learning by primary school children in Greece. D_Read-Narrate specifically targets students who:

- make typical progress in learning to read.
- are sequential bilingual students learning Greek as L2.

We collected information about the learning needs and requirements of bilingual and monolingual readers and through interviews with teachers and students in Ioannina, Greece. A small-scale survey (March to June 2024) was conducted to collect the required information.

The objectives of the research were defined as follows:

1. Understand the current technological situation in schools, so as to create the framework for personalized learning used in the project.
2. Explore teacher and student attitudes and opinions about digital tools for language learning.
3. Explore the difficulties currently encountered by bilingual students and their teachers in mainstream classrooms.
4. Understand the pedagogical needs of teachers and students.
5. Identify student characteristics and interests.
6. Identify teacher training needs for the second phase of the project evaluation.

The interviews were conducted in two parallel phases. **Phase one** included interviews with teachers and **phase two** included interviews with students.

2.1. Interviews

2.1.1. Methodology

Phase 1: Teachers

Participants

The interviews are designed to gather information about all potential users of a system, not just those who will be involved in evaluating the system. 20 teachers participated in our study. All participants were teachers in Greek primary schools. The average age of the participants was 41.9 years (SD = 11.07, Figure 1).

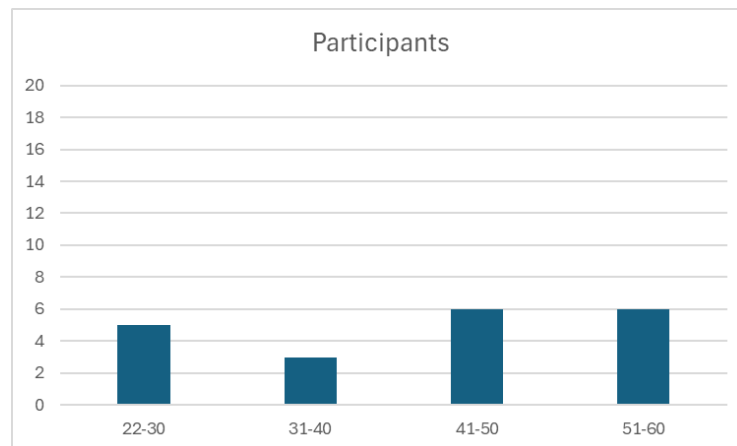


Figure 1: Age of participants

Materials and procedure

The aim of the interviews was to record teachers' attitudes and opinions on the use of digital technologies in the classroom, with a focus on investigating and recording their teaching needs. Teachers were also given a brief description of the D_Read-Narrate software during the interview, in order to gather preliminary attitudes towards the design of the software (see Appendix 1). The interviewers noted the data obtained from the interviews on a special recording form via the Soscisurvey platform (<https://www.soscisurvey.de>), and each teacher was assigned a code, or the teachers answered the questionnaires themselves in the same platform.

The questionnaire comprises five sections:

1. Demographic information: Collects information on age, experience, classroom demographics, and prior training in teaching multilingual students.
2. Pedagogical challenges: Examines teachers' strategies, reading and narration difficulties for monolingual and bilingual students, and preferred activities.
3. Digital tools currently used: Examines the current use of digital technologies, availability and preferences in schools.
4. Expectations from digital learning/teaching tools: Seeks insights into the desired features and functions of digital teaching tools.

5. Preliminary feedback on D_Read-Narrate: Introduces software targets, such as personalized language games and text analysis tools, and asks for teachers' opinions and possible use cases.

Interviews were conducted in person, through video calls when a face-to-face interview was not possible, or by emailing questionnaires to teachers to complete. Written consent was obtained from all teachers prior to data collection. Each interview lasted approximately 30 minutes.

Data processing and analysis

The qualitative analysis of the data was based on the information recorded in the interviewers' accompanying material. In particular, the participants' responses were coded according to certain qualitative criteria related to their attitudes (e.g. positive, negative or neutral), their experiences (e.g. abundant, moderate or insufficient), etc., and an aggregated report summarizing their comments and suggestions was produced.

Phase 2: Students

Participants

32 primary school students (20 monolingual and 12 bilingual) took part in our study. They came from Grades B (3 bilinguals), C (8 monolinguals and 2 bilinguals), D (9 monolinguals and 7 bilinguals) and E (3 monolinguals, Table 1). The average age of the participants was 9.4 years (SD = 0.93). The participants of the bilingual group were selected on the basis of specific selection criteria, namely: (i) chronological age (8-12 years old), (ii) non-Greek L1, (iii) 2-5 years of experience with Greek and (iv) no speech pathology or learning difficulties. The group of monolinguals was selected based on criteria (i) and (iv) above, while criterion (ii) included Greek as L1.

	GRADE				TOTAL
	B	C	D	E	
Monolingual	0	8	9	3	20
Bilingual	3	2	7		12

Table 1: Students' Grade

Materials and procedure

The interviews with the students were conducted in person. First, consent was obtained from the parents. Then an appointment was made for the interviews with the children at a time set by the teachers. Each interview lasted for about 15 minutes. The interviews with the students took place in primary schools in Ioannina.

The questionnaire was used to obtain information from the students on the following points (see Appendix 2):

1. Demographic data: This includes demographic questions such as age, gender and language proficiency.
2. Use of technology and experience with digital tools such as tablets and computers at home and at school. In addition, their interest in using educational software and games for language learning was recorded.
3. Educational experiences and students' preferences for language learning activities and their challenges in the language classroom.
4. Ideas and expectations from a digital learning tool.

Data processing and analysis

The qualitative analysis of the data was the same as it was for adults.

2.1.2. Results

Phase 1: Adults

The first part of the analysis focuses on teachers' experiences and training in teaching (monolingual or bilingual) students. The results provide an insight into the dynamics of the educational environment in this area and highlight gaps and opportunities for skills development. Teachers' prior experience and participation in training or specialization programs were examined.

According to the data, only some teachers (13 out of 20) had experience in teaching students whose first language is not Greek and 7 had no relevant experience. In addition, most of the participating teachers had not received any training or specialization in teaching students with a mother tongue other than Greek. Only nine had received training, with most of them stating that they had participated in training programs, seminars or post-graduate studies to acquire knowledge and skills in this area.

Pedagogical challenges:

The second part of the questionnaire refers to the problems and difficulties identified in education. The aim of this analysis was to gain a deeper understanding of the main obstacles faced by both teachers and students (as identified by teachers).

A general problem reported and faced in Greece is the fact that the assessment of students' Greek language level seems to be mainly empirical, without the systematic use of standardized assessment tools, which may affect the accuracy and reliability of conclusions about students' needs. For example, when asked **how the children's level of proficiency in Greek is determined**, teachers responded, “*Through diagnostic tests, empirical tests or tests that I have developed myself*” [Teacher 3]; “*Bilingual students do not know Greek. I can find out by talking to them*” [Teacher 9]; “*I determine language proficiency arbitrarily, based on their mistakes. They participate normally in class, and I give them extra exercises*” [Teacher 18].

Regarding the **framework that exists in schools to support bilingual students**, the interviews generally show that teachers mention reception classes (13 teachers) and integration classes (3 teachers), which aim to improve students' adaptation to the linguistic and social environment. On the other hand, 4 teachers mentioned that bilingual pupils in their schools attend regular classes like monolingual pupils and do not receive any additional help.

In terms of **teaching style**, analysis of the related responses revealed a diversity of teaching practices and views on teaching and learning. Teachers generally recognize the importance of differentiating lessons according to students' needs, as evidenced by the mention of methods such as roleplay (12 teachers), group work (14 teachers) and differentiated learning (9 teachers). At the same time, there seemed to be a tendency to use traditional methods such as teacher-centered instruction, in which the teacher plays the main role as a facilitator of learning. All teachers stated that they use several methods in their lessons and not just one. Different methods are used depending on the needs of the students, the lesson and the age of the teacher. In terms of methods of teaching reading, all teachers stated that they use a combination of the above methods (teacher-centered, student-centered, communicative or traditional) depending on the text, lesson objectives or students' needs. Younger and middle-aged teachers (22-50) tend to use innovative and interactive teaching methods (role play, group work, differentiated learning). For example, in the question: **“How do you usually teach reading? Give one or two examples of activities”**, teacher 6 replied: *“I teach reading with group activities or games. I ask them to read the text alone, then we read together part by part and discuss the unknown words. I read poems”*. Older teachers (51-60) prefer more traditional, structured approaches. Teacher 11 responded to the same question as follows: *“[...] I try to get the children to read all kinds of texts at every opportunity and try to tell what they have understood or answer comprehension questions”*.

As for the **methods teachers use to get students to narrate**, they usually use games or texts for both monolinguals and bilinguals. Teacher 11 responds to the question of **what methods they use to practice narration in writing or orally**: *“I give one or two examples of activities. I ask them to read out the beginning of a story and tell their own ending either in writing or orally. They can also make up stories from pictures or come up with solutions to a hypothetical scenario”*. The use of games shows that learning should be interactive and adapted to the children's needs.

Regarding the **difficulties of the students**, teachers answer questions related to difficulties in reading and narration. When narrating stories, monolingual students seem to face problems with articulation and grammar, while bilingual students mainly encounter difficulties with syntax and spelling. Regarding difficulties with storytelling (language production), they were asked to answer the following question: **What are the most common problems/difficulties that your students face when narrating (oral or written)?** The answers were differentiated for monolingual and bilingual students. For monolingual students, teachers stated: *One problem they have is the consistent use of kai (and) and sometimes they do not use punctuation* [Teacher 1]; *I see that they have a low vocabulary and cannot express themselves* [Teacher 9]. Regarding bilinguals, Teacher 1 mentioned, *“They have difficulty expressing themselves, problems with spelling, linguistic ambiguity, and difficulty finding the right*

words”; and Teacher 6 reported, *“It is easier to speak in free speech. They are not able to organize their thoughts. They have problems with spelling and grammar”*. Comprehension problems were also mentioned in reading. Based on teachers’ estimations, monolingual students seem to struggle with individual technical skills, while bilingual students have more fundamental problems with language comprehension and production. When asked about difficulties with reading (**“What are the most common problems/difficulties your students have with reading?”**), Teacher 5 responded in relation to bilinguals: *“Bilinguals confuse letters, they can’t read big words, they can’t pronounce words with many consonants in a row because their language is different and many consonants are pronounced differently”*. For the bilinguals, Teacher 14 responded: *“They confuse the letters (pronunciation). They have difficulties with words, or they scribble and read the word as half and then read it”*. As for monolingual pupils, Teacher 14 mentioned: *“They mainly have problems with text comprehension”*. This information shows the different needs of students depending on their linguistic profile, which has an impact on teaching strategies.

To help children with narration, teachers often use texts to support them, using similar techniques for both groups (monolingual and bilingual) but often adapting content for bilinguals. For instance, in question: **How do you deal with problems in storytelling?** Some answers were: *“I give them an outline so they can organize themselves. We do exercises on spelling and expression. I especially point out problems with combining adjectives and nouns”* [Teacher 1]; *“For narration, I give them text templates with the right structure. The production of written language is done in collaboration with the teacher in the classroom. I also give them examples of correct writing”* [Teacher 1]. While additional materials and outlines are preferred for bilingual children, often accompanied by specific exercises, the use of outlines and other supporting materials is also very popular with monolingual children (e.g. *“We just give them an outline to follow”* [Teacher 6]; *“I give them exercises that encourage expression, or I read fairy tales. I tell them to read books”* [Teacher 20]).

Regarding teachers’ impressions about **students’ preferences in terms of the narratives they produce**, monolingual students tend to prefer producing imaginative stories, according to teachers, while bilingual students tend to prefer more personal or culturally rooted narratives, which maybe reflect their different backgrounds and possibly their efforts to connect personal experiences with language learning. When reading, monolingual students seem to focus on a variety of texts such as poems, comics and fairy tales, indicating a preference for creative and structured literary formats. On the other hand, bilingual students often prefer comics and fairy tales, indicating an interest in visually appealing and culturally rich stories. This comparison highlights how bilingual students use stories to navigate across their dual identities, while monolingual students may have a broader range of preferences shaped by mainstream school influences. These insights can help educators design reading and writing activities that cater to the strengths and interests of each group. Indeed, (monolingual and bilingual) children have similar preferences for entertaining and visual texts, but for bilinguals, texts with fewer linguistic demands seem to be more appealing. Teachers report that students prefer to read comics, fairy tales.

This analysis underlines the importance of an individualized approach to teaching and the need to improve assessment methods and adapt teaching to the different linguistic needs of learners.

Digital Tools:

In this analysis, we examine the data in relation to the technological infrastructure in schools, the use of digital media, the training of teachers and the challenges they face when using e-books. The aim is to highlight both the perspectives and the challenges that influence the overall integration of technology into pedagogical practice.

In terms of **infrastructure and available resources**, the majority of teachers (17 out of 20) reported that their schools have a stable internet connection, and available resources mainly include interactive whiteboards, computers and projectors. However, some shortcomings were noted relating to less modern equipment or limited internet access.

Regarding the use of technology, teachers' responses show that technology is used frequently, e.g. *'once a week'*. On the other hand, the general opinion about digital media is negative for 9 (out of 20), while 11 have a positive opinion about technology in school, regardless of their age. In terms of teacher training and development in technology, most teachers appear to have received some form of training in the use of technology.

Expectations from Digital learning tools:

The following analysis examines the different needs of teachers in relation to the use of digital learning tools, focusing on three key areas: Teaching/learning needs, their preferred features of digital media and how they integrate it into the classroom. By comparing the age groups, strategies are identified that can improve the effective use of digital tools in pedagogical practice.

In terms of **the teaching/learning needs that a digital teaching tool could most effectively address**, younger teachers (22-50 years old) emphasize in interactive, comprehensible and interesting lessons that provide a more engaging learning experience for students and recognize the importance of personalized learning to engage students through more individualized approaches. When asked **“What teaching/learning needs do you think a digital teaching tool could best meet?”**, Teacher 5 responded *“I think it can meet students' learning needs because it makes the course more understandable and interesting because they can follow it with greater engagement and understand it more easily”*; *“A digital tool could better meet the students' need for more active participation in the learning process”* (Teacher 8). On the other hand, more experienced teachers (51-60) focus almost exclusively on personalized learning, with interactivity playing a subordinate role: *“A digital tool is a change in educational philosophy, i.e. it (a digital tool) should meet the needs of the children”*.

In terms of their **preferred features of digital media and its integration into the classroom**, younger teachers expressed a desire for interactive and engaging teaching tools such as games and multimedia resources. They emphasized the importance of visual and audio aids to enhance the learning experience. They favored tools that facilitate both individual and group work in the classroom, indicating a

collaborative approach to teaching. For example, when asked: **“What features and functions would you like a digital tool to have so that you can teach more?”**, teacher 1 said: *“I would like a tool that plays a part of the story and lets the students summarize it, that dictates something and the tool can write it down, that offers tests and gives corrections at the end”*; and teacher 5 said: *“I would like learning games, interactive games, sound effects (rewards), sound when reading texts”*. Middle-aged teachers, on the other hand, showed a balance between traditional and modern teaching methods. They value tools that are easy to use and can respond to the needs and interests of the students. In terms of their teaching preferences, they emphasized the importance of reviewing previously learned material and ensuring that new content is understood, suggesting a structured approach to lesson planning (*“I want a tool that is easy to use and responsive to students' needs and interests”* [Teacher 8]). Finally, older teachers prefer more traditional teaching methods, but also recognize the value of incorporating modern tools. They mentioned the importance of visual elements and engaging content to keep students interested. They expressed a desire for more interactive and fun learning experiences and were open to adapting to new teaching methods, while appreciating their extensive experience (*“I would like it to have pictures, colors, games, interesting texts for children, exercises to go with the texts, and digital drawings”* [Teacher 18]).

D_Read-Narrate feedback:

This part of the questionnaire addresses teachers' views on the use of the D_Read-Narrate software in their teaching, after being presented with a brief description of the software. By examining their responses, particularly in relation to their age, we can gain an insight into how different age groups perceive the potential benefits and challenges of using our technology in the classroom. The responses from teachers of different ages reveal a spectrum of attitudes that reflect their experiences, expectations and concerns about the impact of technology on student engagement and learning outcomes.

Teachers aged 22-40 were generally enthusiastic about integrating technology into their teaching. In terms of teachers' needs and preferences, the younger ones emphasized the possibility of personalized lessons and the games offered by the software. They believe that the software can improve student engagement through grouped and interactive activities. For example, questions such as: **“Do you think you could implement differentiated - individualized - instructional practices more easily with this software and why?”** Teacher 6 said, *“When the software is used in groups, you can easily check each student's progress”*. Middle-aged teachers (42-50 years old) focused on the ease of use and the ability of the software to support differentiated instruction. One teacher said, *“I think so, because there are lots of teaching resources provided to support differentiation”* [Teacher 8]. Another added: *“Yes, because it's quite simple and easy to use, which makes it easier to implement”* [Teacher 10]. Older teachers (51-57 years) were more cautious but acknowledged the benefits of the software in certain circumstances. One teacher commented: *“Maybe, depending on the level of the class. It would be difficult in larger classes”* [Teacher 13]. Another commented: *“Yes, but only for at home. There is no time for it at school”* [Teacher 15].

Students' reactions – according to teachers' estimations – are expected to be similar. Many of teachers stated that they believe students will respond positively to the new software because it has the potential to engage learners and allow for differentiated instruction. They see D_Read-Narrate as a tool that engages students' attention and encourages them to explore. However, some expressed concerns about students' initial resistance to change. Below are some responses to a question:

Question 2: **How do you think students will react to this software?**

Teacher 5: *With enthusiasm and a willingness to discover something new that they have never been given before.*

Teacher 6: *It will spark their interest and help them learn faster.*

The analysis of teachers' responses reveals a nuanced landscape of attitudes towards the integration of technology in the classroom that is significantly influenced by age. Younger teachers tend to be more optimistic and open to change, while older teachers take a more cautious approach, reflecting their experiences and concerns about the challenges of introducing new technologies. Understanding these differences is critical to developing effective training and support systems that meet the diverse needs of teachers and ultimately improve the educational experience of students.

Phase 2: Students

The questionnaire for students focused on examining the educational experiences and challenges faced by bilingual and monolingual students in the educational process, particularly in the areas of language and use of technology. The aim was to identify the difficulties resulting from language differences, compare the performance of the two groups of students and draw useful conclusions for more effective support in the educational process. The study seeks to understand how students' language status (bilingual or monolingual) affects their performance in writing tasks, text comprehension and the accomplishment of different types of educational activities, incorporating qualitative data and a comparative approach.

Language difficulties:

It is worth noting that bilingual children mostly gave very short or one-word responses, such as: “*nothing*”, “*many*”, “*difficult*”, “*easy*”, etc. Regarding their linguistic difficulties, bilingual children reported that they often have difficulties with grammar and reading, especially in texts with long dialogues or complex vocabulary. Written language is often more difficult for them (e.g. they find it hard to think about what to write). In a question about language difficulties: “**What do you find most difficult in language lessons and why?**”, Pupil 13 noted: “*Writing and reading*”; Pupil 5: “*I have difficulties with the exercises and the words*”. Monolingual pupils, on the other hand, have the greatest difficulties with written language (essays, protocols) and spelling. Grammatical structures, such as use of pronouns, cause problems for some children, but generally less than for bilingual pupils (Pupil 15): “*I have difficulties with certain pronouns and articles, I don't understand when they occur*”.

As far as difficulties in understanding texts are concerned, bilingual children report various comprehension difficulties, especially if the text is long or contains difficult words. They often need support to fully understand the text. When asked:

“How difficult or easy is it to understand a text?”, many students answered: *“Quite difficult”* or *“very difficult”* (6 out of 12). Monolingual children, on the other hand, generally find it easy to understand the text, even if difficulties arise if they do not take the time to look up the text. The difficulties are generally milder for monolingual than for bilingual children.

As far as narration difficulties are concerned, bilingual children find storytelling quite difficult. These children often find it difficult to express themselves clearly or to develop creative ideas. Monolingual children find storytelling easy. Pupil 31 answered the question **“How difficult or easy is it for you to tell a story?”** *“It’s easy, I write a lot, and teachers tell me to shorten it”*.

In terms of difficulty by text type, bilingual children prefer texts with pictures (e.g. comics) and find literary or long texts with complex content difficult. For example, when asked: **“Which texts are easier for you and which are more difficult?”** Pupil 2 responded: *“I like comics more. I find texts with long dialogues difficult”*. Poems are rarely mentioned. For monolingual children, small or simple texts are considered easier, while large and literary texts can be difficult. Poems are perceived as pleasant and relatively easy.

With regard to the difficulty of the exercises, all children state that they have more difficulty with syntax and grammar exercises, while closed tasks (e.g. matching tasks, cloze texts) are perceived as easier.

Technology:

This comparison aims to explore similarities and differences in the views and practices of students belonging to two different linguistic profile groups: monolingual and bilingual. The data comes from questions related to the use of tablets/computers, their linguistic preferences in the field of technology and their attitudes towards educational applications. Their habits, needs and preferences are explored, with a particular focus on linguistic diversity and their technological experience.

Regarding the **use of tablets or computers**, bilingual students seem to use tablets/computers slightly more often, especially at home, while monolingual students use them only to a limited extent in the classroom. 68.2% of monolingual students reported using technology in the classroom, although some (31.8%) said they do not. At home, almost all use a tablet/computer every day, with a few exceptions (13.2%) who said they only use technology on the weekends. Bilingual students’ responses to the question about using technology in the classroom varied. Some use it (40%), while others (60%) do not. Tablets/computers are used frequently at home, with some (12%) stating they use them daily. Only one child answered no to this question.

As far as **language preferences** are concerned, monolingual students are more fixated on Greek, while bilingual students show a greater linguistic diversity, with English predominating. Monolingual students prefer Greek especially when using tablets/computers, although some of them indicated a preference for English (for gaming or convenience). Bilingual students report using both languages (Greek and their mother tongue or English).

Regarding the **activities and pedagogical applications**, the answers of the monolingual students were divided. Some of them reported playing language games frequently (59.1%), while others did not play them at all (40.9%). On the other hand,

only a few of them read e-books (31.8%), and they mostly prefer Greek. Among monolingual students, there is a strong interest in apps with language games, with a focus on titles, rewards and the ability to play with friends. In contrast, most bilingual students (76.5%) avoid language games and only one student stated that they read e-books. They are interested in apps that contain heroes, titles and interactive things in games, but also offer a choice of languages.

2.1.3. Conclusion

The analysis of the responses of teachers and students provides valuable information for the development of innovative language applications that meet the needs of the educational community. In general, we need to focus on the needs of learners.

Monolingual and bilingual students have different needs and difficulties in language. Monolingual learners have more difficulties in areas such as spelling and grammar, while they find short or simple texts easier and prefer to write fictional stories. Bilingual learners have difficulties with comprehension and language production and tend to prefer pictorial or interactive texts such as comics. The D_Read-Narrate tool will attempt to address both populations' needs by personalized activities based on language level, such as grammar exercises, simple story patterns and comprehension games or texts with comprehension exercises.

There are no major differences between the two groups when it comes to the use of digital tools. Most of the students mainly use technology and are familiar with it. What students want and what our tools should provide are interactive elements such as heroes, game sequences and rewards to keep students interested.

Regarding the integration of teaching strategies, teachers favor a variety of teaching methods: group activities, role-playing, and differentiated instruction for younger teachers, while older teachers prefer more traditional approaches. Teachers therefore seem to need tools for collaborative learning, e.g. group games and supporting materials such as text templates or guided writing activities.

Through the interviews with teachers it was also found that a diagnostic test for the level of Greek proficiency is needed. D_Read-Narrate will be equipped with a diagnostic/language assessment test that teachers can use on the tablet to determine the bilingual students' level in Greek. Specifically, the weighted "Let's Speak Greek" tests (II, III), which were developed to assess the language level of bilingual students (Tzevelekou et al. 2004), were adapted. From these tests, the sections on oral comprehension, written comprehension and grammar will be included in the D_Read-Narrate software. The "Let us Speak Greek II" test is intended for children aged 8 to 11 years at levels A1 to B1, while the "Let us Speak Greek III" test is intended for children aged 10 to 12 years at levels A2 to B2.

It was also clear from the interviews that teachers will require specialized training and ongoing support to begin implementing the D_Read-Narrate system in their classrooms. Detailed instructions on how to use the system (both in terms of technology and pedagogical approach) and how to set up individual profiles will be required, as well as ongoing technical and pedagogical support. To address these needs, face-to-face training sessions, as well as online training will be provided by the research team.

Using data to create a language app can enhance learning by providing students with a tool that combines personalization, interactivity and multilingual content. At the same time, it provides teachers with a means of supporting their students that is tailored to the needs of the group in question.

3. REFERENCES

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4. APPENDIX

4.1. Appendix 1: Adults' questionnaire

This questionnaire was created by the research team of the Linguistics Laboratory of the Department of Philology of the University of Ioannina in collaboration with the School of Applied Mathematical and Physical Sciences of National Technical University of Athens and is the first part of a project entitled: “Digital applications for teaching reading and narrative skills in multilingual Greek primary school classes D_Read-Narrate”. It is aimed at primary school teachers and funded by the Hellenic Foundation for Research & Innovation (H.F.R.I.).

The aim of the project is to develop tested, personalized learning technologies (educational games and an electronic reading narrator) on a tablet that supports the learning and teaching of reading skills for students.

To this end, we aim to capture teachers' attitudes and opinions on the use of digital technologies in the classroom, including their teaching/learning needs.

The material to be used in these applications will be derived from the information we have obtained through these interviews.

Please answer the following questions freely based on your knowledge and experience as a teacher.

Your participation in the survey will be anonymous.

Thank you in advance for your participation and cooperation!

If you wish, please fill in your mail.

A. General - demographic questions

In all modules, you can specify more than one option for the closed questions below.

1. How old are you?

2. How many years of teaching experience do you have?
3. How many students do you have in your class this school year?
4. What class do you teach?
5. Do you have experience teaching students with a mother tongue other than Greek (*different languages) (please indicate “yes” even if you have only taught a student for one year)?
6. Please specify the years and context (e.g. integration class, Reception Facilities for the Education of Refugee Children, intercultural school, mixed class, etc.)
7. Do you have students with native languages other than Greek in the current school year?
8. If you answered YES to the previous question, you know which mother tongue the students have and which other languages they speak.
9. Have you received training on the teaching of students with a mother tongue/language other than Greek?
10. If you answered YES to the previous question, please indicate the type of training you have received
11. Have you received any training/education on issues related to teaching pupils with learning difficulties?
12. If you answered YES to the previous question, please indicate the type of training

B. Challenges and difficulties in teaching language learning in multilingual classrooms.

1. What would you say is your teaching style?
 - Traditional
 - Communicative
 - I do not exclusively follow one model
 - Other
2. In your opinion, which of the following techniques/methods do you use frequently in your teaching?
 - Group work
 - Role play
 - Differentiated teaching
 - Activity-based approach
 - Other
3. How do you usually teach reading? Give one or two examples of activities.
4. What methods do you use to practice narration orally or in writing? Give one or two examples of activities.
5. How does the school deal with students who do not speak Greek well?
6. Do they attend the reception department? Do they attend classes regularly? Others?

Please answer the following questions separately for monolinguals and bilinguals.

1. What are the most common problems/difficulties your students have with reading?

2. What are the most common problems/difficulties that your students have with narration (oral or written)?
3. How do you deal with them?
4. What kind of texts do your students like to read and why? Can you give examples?
5. What kind of narratives do your students produce most often [personal stories, fairy tales, fictional stories, etc. and whether they are guided or unguided] and in what context/course?
6. What other difficulties do bilingual learners usually encounter in language learning? (vocabulary, grammar, understanding academic texts, etc.)
7. If you have (or have had in the past) bilingual students in your class this year, what do you think their level of Greek language proficiency is?
8. How was this level determined (diagnostic tests and which ones?)

C. Practices, challenges and opportunities related to the current use of digital technology in schools

1. Does your school have a stable internet connection? Yes No
2. What technological resources are available in your school and classroom?
3. What do you think about the use of digital media in the classroom?
4. How often do you use digital media in your lessons?
5. Have you received any training (e.g. seminars etc.) in the use of digital media in the classroom?
6. Have you tried using e-books to support the course or specific areas of your course?
7. If you answered YES to the above question, could you please indicate the criteria for selecting the books?
8. Relevance to the topic of the lesson Difficulty of the text Student preferences Accessibility (how easily I can find it) Other

D. Expectations and requirements from digital teaching tools

1. What teaching/learning needs do you think a digital teaching tool could address most effectively?
2. In your opinion, what skills would be best taught using a digital teaching tool (e.g. vocabulary, grammar, reading comprehension, oral production, written production, etc.)?
 - vocabulary
 - Grammar
 - Reading comprehension
 - Oral production
 - Written production
 - Other

3. Which students do you think could benefit the most? The monolinguals, the bilinguals or both groups, and why? Explain by filling in the appropriate box below your choice.
4. What features and functions would you like to see in a digital teaching tool to help you teach more?
5. How would you want to integrate this tool into your teaching? (You can give more than one answer)
 - Individual work in class
 - Group work in class
 - Homework
 - Homework student assessment
 - Student Progress Monitoring
 - Other
6. In which phase of the lesson would you most like to integrate a digital teaching aid?
 - The repetition of previous material
 - The presentation of new material
 - To practice and consolidate the new material
 - Checking understanding of the new material

D_Read-Narrate

D_Read-Narrate is a software aims at improving the language skills of primary school students. It consists of two main applications:

a.Smart Games:

A series of language games and puzzles that allow students to expand and/or improve their knowledge and skills in the areas of spelling, vocabulary, word structure (morphology) and sentence comprehension (syntax) in a fun way. The Smart Games are designed to provide personalized help to students by offering them activities of increasing difficulty based on their individual performance and language profile.

b.The Reader/Narrator

A series of digital lessons in which children learn to analyze and find information in texts and acquire text comprehension techniques. They also learn to create and tell their own stories while improving their language and reading skills.

In addition, D_Read-Narrate includes a number of tools for teachers, such as:

- digital
- assignment,
- monitoring and recording student performance, etc
- an application to assess students' language skills.

E. First opinions about D_Read-Narrate software

1. What do you think of the D_Read-Narrate software as described?

2. How likely do you think it is that you will integrate the software into your course and why (provide comments)?
3. How do you think students will react to this software?
4. Do the bilingual students react differently to the monolingual students and why?
5. Do you think parents will react positively to the use of this software in the classroom and why?
6. Do you expect the parents of bilingual students to react differently from the parents of monolingual students and why?
7. Do you think this software will make it easier for you to implement differentiated - personalized - instructional practices and why?
8. Is there anything else you would like to add regarding the software?

4.2. Appendix 2: Students' questionnaire

A. GENERAL INFORMATION

1. Age

Class:

2. Gender: boy/girl

3. Where and when were you born?

4. If you were NOT born in Greece, do you remember how old you were when you came here?

5. What languages do you speak?

6. When did you go to the school you are in now?

For bilingual children only

1. How would you rate your knowledge of Greek now

LANGUAGE – COMPREHENSION (ORAL)	
LANGUAGE – PRODUCTION (ORAL)	
READING COMPREHENSION	
WRITING	

.

2. In general, how often do you use each language every day (in everything you do)?

Greek: ☐ very ☐ sometimes ☐ almost never

Other language: ☐ very ☐ occasionally ☐ almost never

B. DIFFICULTIES AND CHALLENGES IN THE COURSE

1. What do you find most difficult in language teaching and why?
2. How difficult or easy is it to understand a text you are reading?
3. Which texts are easiest for you, and which are more difficult?
4. How difficult or easy is it for you to tell a story?
5. Which exercises do you find easier or more difficult and why? (open, closed, matching, grammar, vocabulary, oral production, narration, etc.)

C. TECHNOLOGY AND DIGITAL MEDIA

1. Have you ever used a tablet or computer in class? If so, in which lessons and how? How often?
2. Have you ever used a tablet or computer at home? If you answered YES to the above question, how do you use it (to play games, to find information, to study, to communicate with friends)?
3. Which language(s) do you prefer to use on your tablet and/or computer? And why?
4. How often do you use Greek on your tablet and/or computer? What activities?
5. Have you ever played language games in Greek on your tablet/computer?
- 6.
7. Have you ever read e-books? In which language(s) do you prefer to do this and why?
8. Would you like to use a language game app in the classroom? Why would you do this? What would you want from such software? (Rewards, titles, heroes, the ability to play with my friends)
9. Would you like to use a text or e-book app in the classroom and why? What would you want from such software? (Rewards, titles, heroes, the ability to play with my friends)