

Language Teachers and Digital Education

Specification survey of the “Empowering Teachers with Technology”

Erasmus+ Strategic Partnership Project

This study is an output of the specification phase of the Strategic Partnerships Project “Empowering Teachers with Technology – 2018-1-HU01-KA204-047805” supported by the European Commission under the Erasmus+ Programme.

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EU, October, 2019

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BACKGROUND

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In September 2018, a five-member consortium set up the Erasmus+ Strategic Partnership project “Empowering Teachers with Technology” with two particular objectives:

1. Developing a software program (Nexus) that offers relevant technological tools for teachers to support their students during their online learning, thus opening a revolutionary way of language teaching and learning.
2. Developing language teachers’ openness and methodological skills on how to keep pace with digital technologies, use up-to-date teaching methods during their courses and support students who struggle with online language learning platforms and cannot go on without professional support.

The members of the consortium:s

- Itt és Most Association, Hungary
- CONVERZUM LTD, Hungary
- Euroform RFS, Italy
- Code Yard Ltd, Hungary
- NLV8 TECHNOLOGIES LTD, United Kingdom

Triggers of the project

1. Challenges at the EU level

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - Multilingualism: an asset for Europe and a shared commitment stresses the value of linguistic diversity in the EU. It presents the steps that should be taken to ensure that multilingualism is mainstreamed into EU policies, with the goal of reaching the ‘Barcelona objective’ (Europeans should be able to communicate in two languages in addition to their mother tongue). One of its key points is that “the language gap in the EU can be narrowed through the media, new technologies and

translation services.” It also supports “projects involving language and communication technologies and cross-border administrative cooperation in order to reduce the language gap.” The Council of the EU in the Council conclusions of 20 May 2014 on multilingualism and the development of language competences invites the member states, with due regard for the principle of subsidiarity and in accordance with national circumstances, to exploit the potential of the Erasmus+ Programme and the European Structural and Investment Funds to achieve these aims.

In the 2015 Joint Report of the Council and the Commission (Education and Training 2020), a new priority to find methods of open and innovative education and training was defined, including exploiting the technological achievements of our digital era. In its conclusions on language competences to enhance mobility, the Council agrees that “a good command of foreign languages is a key competence essential to make one’s way in the modern world and labor market.”

The Council states that it is useful to maintain and develop those European tools and programs which support language learning in both formal and non-formal education contexts in order to enhance learning and professional mobility.”

Furthermore, on 17 January 2018, the European Commission adopted the Communication on the Action Plan on Digital Learning. The Action Plan outlines how the EU can help individuals, educational institutions and education systems to better adapt for life and work in an age of rapid digital change by making better use of digital technology for teaching and learning; developing relevant digital competences and skills for the digital transformation; improving education through better data analysis and foresight.

2. Challenges on the teachers’ and learners’ side

Due to the increasing number of online language learning software offering growing standards of services, the field of language teaching has significantly changed recently. However, while outstanding technical solutions are available, teachers and their precious guidance, control and support have been excluded from the learning processes. The aim of our

preliminary survey was to identify the pedagogical and technical barriers as obstacles to a link between students and teachers in the online space and the potential to make language learning motivational and effective on the platforms of the digital era.

Our answers

In accordance with these priorities the aim of our project is to establish a strategic partnership at the European level, consisting of a framework in which we intend to develop innovative solutions for the use of ICT-assisted electronic and mobile learning systems in the field of adult education, particularly in foreign language teaching.

The digital platforms we develop encourage and help language teachers to utilize e- and m-learning systems as novel education tools in the course of teaching and training, and by disseminating our results it also facilitates the use of modern ICT tools in formal language learning. The project specifically targets the development of language teachers' ICT competences, so that they will be able to offer the most effective education to students by applying various digital teaching materials.

Description of the project

Besides the primary objective of the EU's language policy that every European citizen should acquire at least two foreign languages, multiculturalism and the wide open online world encourage more and more people to learn languages. But the method of language learning, mainly among young people, has materially changed. Thanks to the rapid spread and unique popularity of smart mobile devices and open wi-fi networks, the number of users who download and use online language teaching applications has been increasing in recent years, and according to educational prognosis, a further significant increase is expected. Growing claims for using electronic learning (e-learning) and mobile learning (m-learning) systems on the students' side demands conformation from the teachers. If they wish to offer services that meet their students' needs, they also have to modify their training methodologies and step into the digital world.

As a result of our previous qualitative research we have successfully identified three major problematic issues:

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1. There are numerous software-based language teaching programs available on the market (Duolingo, Rocket Languages, Living Language, Rosetta Stone, etc.). However, neither language teachers, nor these applications have detailed, recorded and measurable information and data on the progress and the linguistic skills of the learners.
2. Teachers themselves find it difficult to use digital and mobile tools, and their use of these devices is restricted. Materials on the methodology of applying e-learning in language teaching are widely available; however, there are no integrative m-learning frameworks which would realize the learning process on portable devices.
3. In the case of digital educational applications – due to the absence of the teacher – students’ performance cannot be measured or monitored. There is no well-established system in digital education that would provide feedback on the students’ performance. Furthermore, these applications all lack the motivational factor stemming from the personal presence of the teacher. Based on our analysis (see attached), currently available language teaching applications have excellent professional indicators, but they leave no room for feedback. The major drawback of all available language teaching software is that they exclude the teacher from the process of learning. They do not allow the teacher to monitor and evaluate learners’ progress, to get a glimpse into, to have a say in and to actively guide learners’ activities; consequently, teachers do not have the chance to step up as motivators. This hinders their use in formal education, and makes teachers and education experts in general very suspicious of language learning applications.

The primary objective of our project is to refute such negative beliefs and to provide evidence that digital technology does not render teachers' work unnecessary, but multiplies their resources. We aim to create an easy-to-use interface that dispels teachers' fears that using digital technology is difficult and requires extra work. During the project we will develop Nexus, a software suite, which integrates

information and data obtained from the use of any language learning applications or systems into the process of language teaching, thus allowing teachers to act as motivators and mentors besides being merely instructors. The created software provides an objective and transparent picture of the students' performance through the attached app so that digital language learning can be personalized, meaning efficiency both for students and teachers.

Teachers using Nexus are sensitized to digital technology with gamified video tutorials and tests. These videos include information on the use of the new technology, demonstrate its simplicity, and how education is supported by the tools developed. Videos are supplemented with methodological materials that help teachers motivate students in digital education.

The creation of Nexus is motivated by the long-term objective that we deliver the integration of ICT devices into traditional education to all countries of the EU. Considering the overlap of the fact that that language learning is a desired, supported and growing educational area in the EU, and the shifting of learning habits towards mobile technology, we strongly believe that our project will have a relevant impact on tens of thousands of teachers and hundreds of thousands of learners.

As our to-be-developed software and supporting materials are not national solutions but will be commonly used across Europe where the level of language learning and knowledge, the learners' and the teachers' preparedness and the penetration of online applications are significantly different, we need a transnational consortium with sector-specific partners covering the areas of our complex project.

Conception of Nexus Software Suite

Due to the increasing number of online language learning software applications offering growing standards of services, the field of language teaching has significantly changed recently. The number of users who download and use online language teaching applications has been increasing in recent years, and according to educational prognosis, a further significant increase is expected.

However, outstanding technical solutions are available with excellent professional indicators, the major drawback of all available language teaching software is that

they exclude the teacher from the process of learning. They do not allow the teacher to monitor and evaluate learners' progress, to get a glimpse into, to have a say in and to actively guide learners' activities.

Nevertheless, growing claims for using electronic learning (e-learning) and mobile learning (m-learning) systems on the students' side demand conformation from the teachers. If they wish to offer services that meet their students' current needs, they also have to modify their training methodologies and step into the digital world.

Objectives

The primary objective of developing Nexus is establishing a link between students and teachers in the online space and opening a door for teachers to enter their students' world of digital language learning.

Teachers empowered with technology and thus insight into their student's actual performance and learning habits, and armed with a relevant methodological toolkit of digital education, can offer the same precious guidance, control and support in the online space as they do in traditional classrooms.

With the aid of the objective and transparent feedback and information on the students' performance through the connected learning applications, digital language learning can become personalized, teachers can act as mentors and instructors at the same time. This initiates efficiency both for students and teachers in a revolutionary way of language teaching and learning.

Professional features, functions, services of Nexus

General operational process and functions of the software:

1. Establishing a channel (SDK) for the language learning platforms to connect to Nexus, allowing teachers to gain insight into their learners' performance and learning progress. Nexus serves as a bridge between the language learning platforms and the teachers themselves.
2. Nexus processes all the data generated by students in real time through the connected learning platforms.
3. As a result, Nexus creates a valuable, textual, imagery and graph based, user-friendly assessment for teachers about their students' progress. This

feature offers actionable and detailed visualised data to teachers and feedback on the improvement of their students in every language skill (writing, reading, speaking, listening, grammar, vocabulary), and furthermore, teachers obtain information on the learning activities of their students, the time they spend on these, and their results. Thereby Nexus allows teachers to keep a complete record of the e-and m-learning activities of their students outside the classroom in the online space.

The results contain both qualitative and quantitative information such as:

- Learning activities: regularity of studies, completed lessons, time spent on lessons, number of repetitions
 - Outstanding performances: the app encourages the teacher to reward students in the case of sustained learning or an excellent result.
 - Strengths and weaknesses of the students: student performance is measured and evaluated in several different areas such as vocabulary, grammar, listening, speaking, reading, and comprehension. The teacher is given not only feedback and statistics but lessons, exercises, topics and task types suggested to incorporate into the teaching plan for the given student.
 - Error analysis: complex analysis about strengths and weaknesses of a student on a daily, weekly and monthly basis. Barriers, challenges, typical mistakes, words, expressions, tasks, and skills which cause continuous issues for the student are analysed.
 - Vocabulary: active and passive lexicon
 - Motivation: topics students are interested or uninterested in.
 - § Group performance: the information can be listed for individual students or for study groups or classes.
4. Teachers can take advantage of this unique technological aid both for their online and offline classroom work. They can plan online curricula by putting special emphasis on students' specialised needs as well as receive assistance in preparing for their offline classroom work. Nexus also offers teachers an online tool to enhance communication with their learners.

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5. Nexus is not only a practical toolkit for teachers but a cutting-edge methodological guidance for the world of digital education.
6. Nearly one hundred methodological, motivational and tutorial videos develop language teachers' openness and methodological skills, give relevant professional knowledge and best practices to keep pace with digital technologies, to use up-to-date teaching methods during their courses not only in the field of language teaching but in any further subjects.
 - The videos also offer relevant pedagogical tools that address how to help students who cannot overcome obstacles without professional support during their online learning.
 - Many of the videos can also be shared with the students, ensuring direct help in a problematic situation.
 - The methodological part of Nexus contains tests and exercises that can monitor, evaluate and correct the understanding and inclusion of the newly-gained knowledge of the teacher and thus help teachers to put them to practice.

From this wide spectrum of unique and innovative functions and services of Nexus, teachers in various educational sectors can compose the most appropriate teaching elements to help with their work. Teachers from public education, private teachers, staff of language schools, university professors - all of them can pick the most useful and relevant data, information and enjoy the advantages of Nexus. By recognizing students' learning habits, strengths, weaknesses and motivational factors, and by having accurate feedback about their learners' active and passive knowledge, teachers can prepare curricula with personalized content and teaching methods.

In this way, Nexus is not simply a useful platform for monitoring and checking students' progress, but also a highly effective tool for talent management, catching-up and mentoring learners. Thus, Nexus is not only a multifunctional software but an opportunity for all participants of the language learning process to set and reach their goals.

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The traditional front-end user interface is an HTML-based web platform used on PCs. However, according to current trends, smartphone usage time has exceeded that of PCs, and forecasts estimate further significant growth. Users also demand to have access to their programs and applications on their mobile devices. As most mobile phones and tablets operate on versions of two operating systems (iOS and Android), and since we wish to ensure the opportunity of using the software to all the inquiring users, we offer access to both platforms. The applications, with all of their functions, are available completely free of charge in the App Store (for Apple devices) and Google Play (for Android-based devices).

THE BASIS OF THE STUDY

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Based on the previous theoretical ideas of the to-be-developed Nexus software suite, we gathered all educational and IT aspects. During personal and online workshops we went through a professional UX research and development process. During the discovery phase, we followed a business model named Lean Canvas Model. As a result, we got a basis for the specification survey.

There were three types of information gathering:

1. Online questionnaire with three sections:
 - General data of the responding teacher
 - Feedback about the teachers' feelings, practice and experiences regarding digital education, in particular online language learning platforms, to understand the world of English teachers, explore their habits, needs and where the pain points are when it comes to teaching, and to understand their attitude toward digital technology and its role in language teaching.
 - General expectations regarding the possible features of Nexus to check the relevance of the concept of Nexus, what teachers think about the added value of such a tool, what the tool should focus on, etc.

2-3. Personal and video interviews with teachers and language school leaders.

The personal interviews were conducted in Budapest, the video interviews throughout Europe. There was a prepared an interview script which led the discussions. The main topics were similar to those in the questionnaire, but there were opportunities to explain the ideas in detail.

RESPONDENTS TO THE QUESTIONNAIRE

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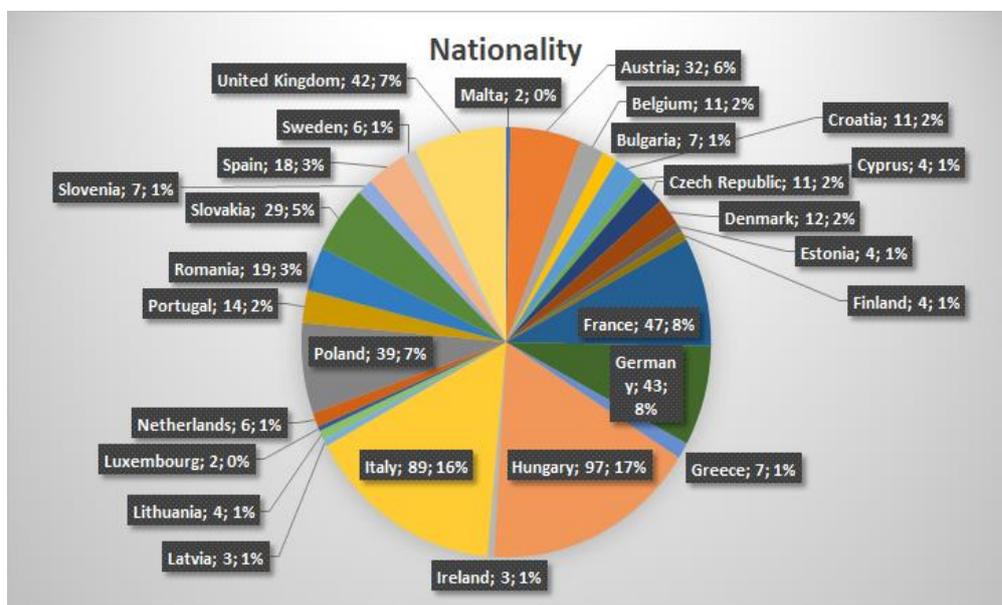
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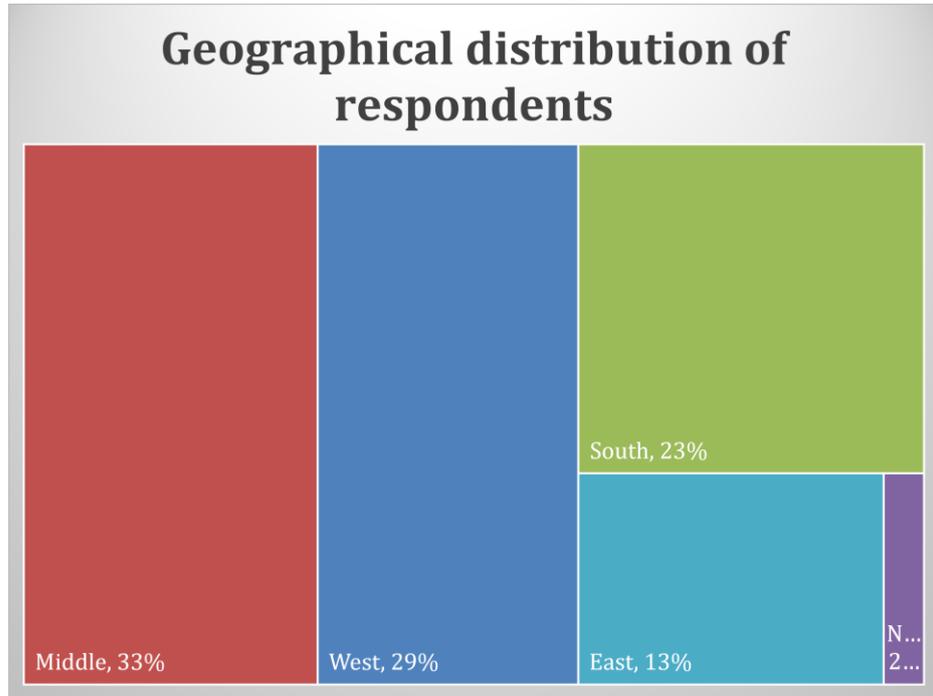
The questionnaire was created and published as a Google Form, and was only able to be filled out online. Between February and September of 2019, 617 English teachers responded to our questions. A portion of the respondents were contacted directly via email, while others were asked to respond through language schools. We also placed a link to the questionnaire on the project’s homepage and Facebook page. From the beginning of the project, we connected with numerous English-teaching groups on Facebook in which we shared the link multiple times as well. As our project is at the European level, responses from countries outside Europe were ignored during processing. Thus, the data of 573 respondents were processed during evaluation.

Respondents represent all member states of the European Union.



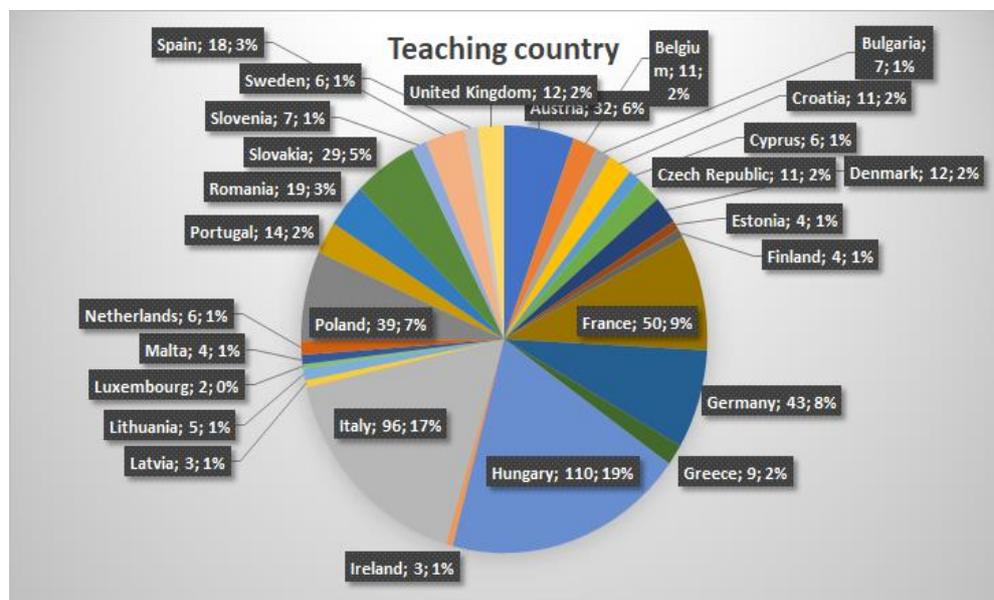
Distribution of respondents by nationality

Most of the respondents were from the project’s partner countries (Hungary, Italy, United Kingdom), but the number of those living in Austria, Germany and France is significant as well. Within the EU, the distribution by geographical unit was balanced, apart from the underrepresentation of Northern Europe.



Geographical distribution of respondents

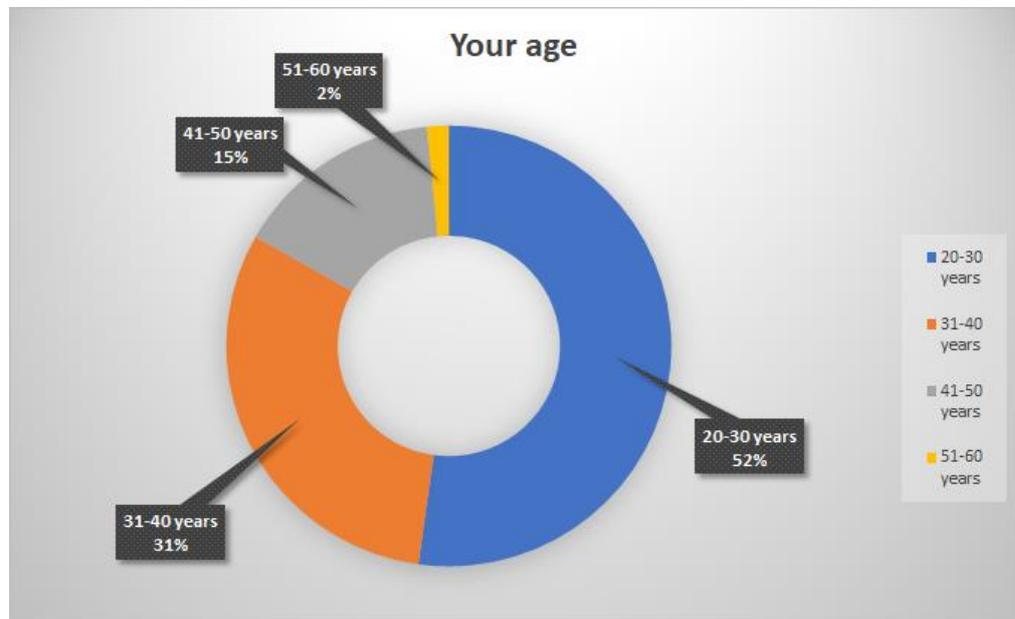
In addition to nationality, we also asked responding teachers which EU countries they typically teach in. The most significant discrepancy appeared among British teachers, the majority of whom (30 out of 42) do not work in their own country, but rather in other European Union member states.



Teaching countries of the responding teachers

The age range of the responding language teachers is quite broad. The research involved the participation of language teachers ranging from career entrants to those nearing retirement age.

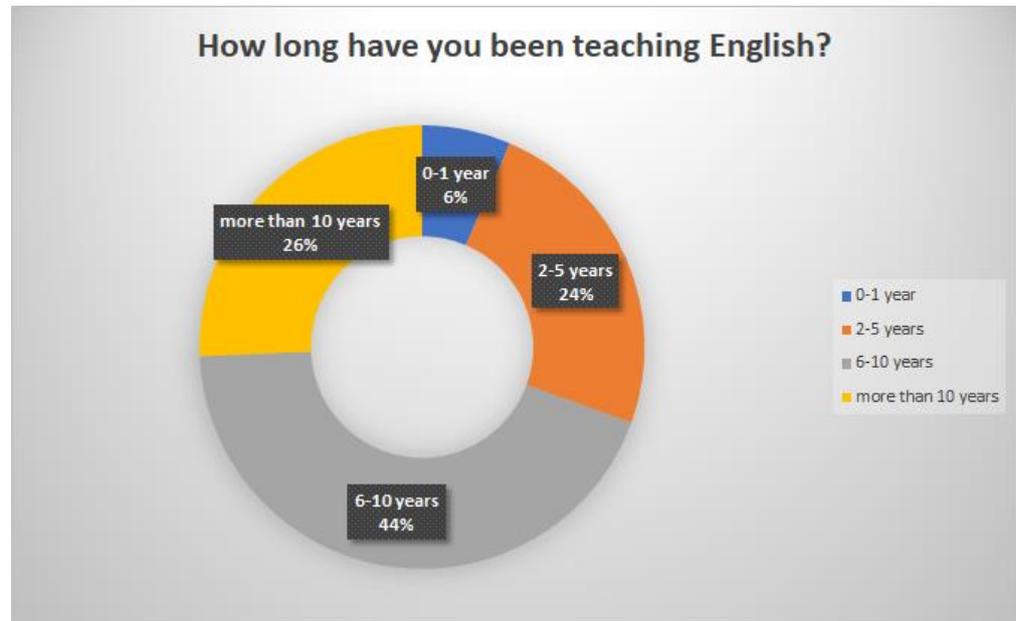
More than half (52%) of the respondents belong to the 20- to 30-year-old age group. Those from 31 to 40 years of age represent the second biggest group, comprising exactly 31% of the total sample. 15% of the respondents fall into the 41- to 50-year old group, and merely 2% of the respondents are between 51 and 60 years of age. These numbers suggest that it’s easier to reach the younger age group with this kind of questionnaire, and that their willingness to complete it is presumably higher than that of the older age groups, as there was an inverse relationship to the answering of the research questions as age increased.



Distribution of respondents by age

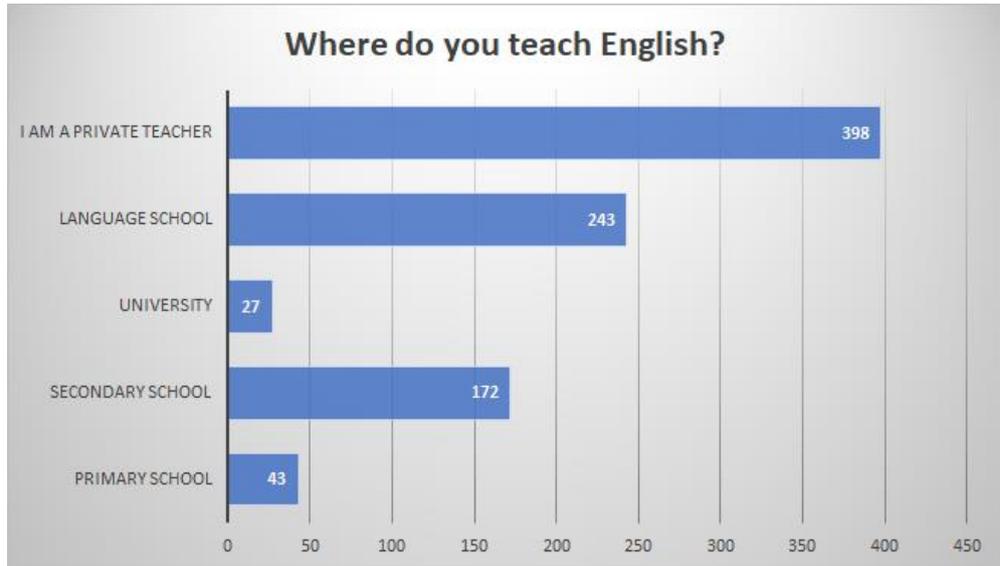
Almost half (44%) of the teachers surveyed indicated a duration of 6 to 10 years regarding the current length of their teaching career. The proportion of those who have been teaching for more than 10 years and for 2 to 5 years is almost equal (26% and 24%, respectively), each accounting for a quarter of the respondents. The proportion of those who have been teaching for a maximum of one year is the lowest, at just 6 percent.

It may be relevant to the purpose of the research whether those who have been teaching for less time (presumably younger teachers on average) are more innovative and open-minded about integrating digital technology into education than their colleagues who have been teaching for a longer period of time (and are presumably older). Insofar as this is not demonstrable, we can see that the propensity to use new types of pedagogical methods is not age dependent.



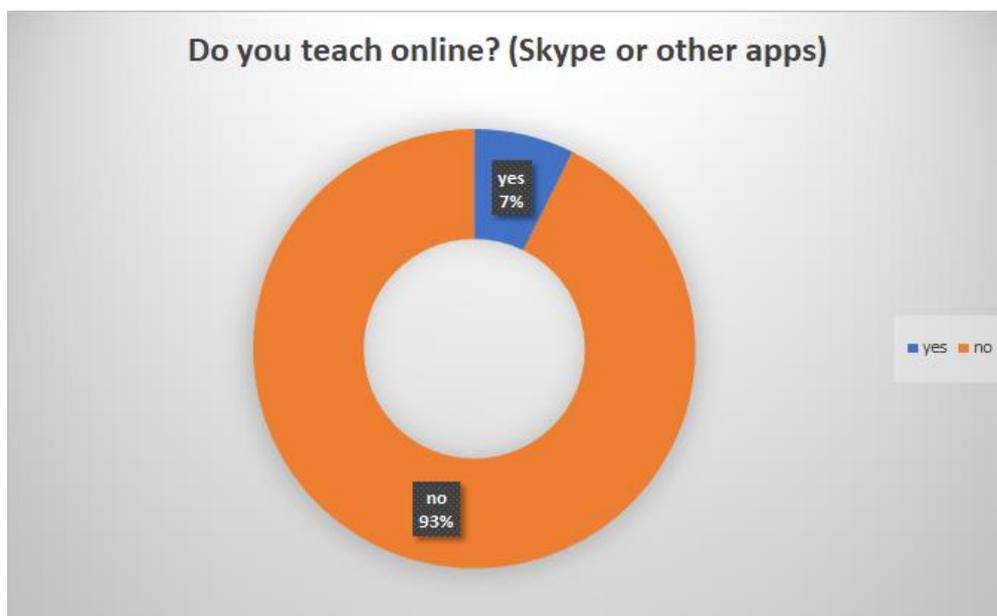
Respondents' time spent teaching

There are almost no teachers who teach in only one place. Many of the subjects work as private teachers as well, with a large number also teaching in language schools and secondary schools, many in all three areas at the same time. University and elementary school teachers represent a smaller proportion of the sample than those mentioned above. The reason for all of this is probably the fact that it is more profitable to teach in a language school or as a private teacher than at a university, in terms of the ratio of energy invested. In addition, teaching privately or in language schools comes with less constraints regarding working hours, curriculum and pedagogical methods, and usually means having to deal with fewer students at once, and these factors can have an impact when it comes to choosing a mode of teaching.



Workplaces of the language teachers

We were also curious about the proportion of the language teachers we reached that use the opportunities offered by online language teaching. Several initiatives can be found on the internet that endeavor to connect language learners and teachers in the online space, to create a personalized, yet as flexible possible form of language teaching through occasional or ongoing collaboration. Experience has shown that these are becoming increasingly popular primarily in countries of the Far East. According to the answers received during our research, this tradition has not yet been established in Europe. Only a slight 7 percent of respondents teach using online methods, with a very large majority favoring “classical” teaching methods. This may in part be due to the underdeveloped approach to online teaching, or possibly to a lack of knowledge on how to use the required interfaces.



Openness of language teachers to online forms of teaching

However, already in 2007, the article “Learning and Knowledge in the Digital Age” by András Benedek published in the Hungarian magazine Magyar Tudomány (Hungarian Science) looks to e-learning and other forms of digital learning and education as a new pedagogical paradigm. It mentions concerns such as the increasing pace at which digital learning is developing, in spite of the fact that digital education does not yet exist at system level. More than a decade later, the data obtained for this question corroborate this finding by the author.

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The main goal of our project is to provide language teachers with a platform that plugs them into the world of digital language learners which has been practically closed to them, and that gives them the opportunity to introduce a new, motivating educational methodological tool. We know, however, that the success of Nexus also depends on its ability to provide solutions to language teachers' existing problems. Adapting a brand new application into the educational toolbox means a lot of challenges, which teachers will only take on if it makes their work observably easier and more productive at the same time. For this reason, during the interviews and in part during the questionnaire research, we focused on the existing problems and searched for the application-specific functions that can provide relevant answers to them.

Lack of time

During the oral interviews, the teachers identified a perpetual lack of time as one of the most significant problems encountered during their work, which emerges from a combination of several factors:

- Almost every one of the teachers holds lessons in several places (see answers given for the “Where do you teach English?” question). This involves a great deal of travel, and very few of them use time spent riding public transit actively, so they unequivocally regard it as lost time.
- The significant divergence of the daily schedule from traditional working hours is the primary reason for the difficulty of maintaining a work-life balance. Naturally, this does not affect those working exclusively in school education, but we have observed that this represents just a fraction of the total number. Late afternoon, evening and weekend classes are predominant for those teaching at language schools or privately. Those teaching in public education and privately give lessons at practically all hours of the day.
- At the same time, the number of lessons and schedules undertaken is, for most language teachers, an existential question. Therefore, many teachers

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commit to a sufficient and profitable number of classes with a hectic, difficult-to-plan schedule that allows for little free time.

- However, there is a general consensus that “good lessons require a lot of preparation,” that is, the greatest amount of time is required for compiling interesting, content-rich tasks that are motivating in topic and methodology (see below for details).
- Time spent correcting homework is a particular loss for most teachers, although they feel that devoting valuable minutes of class time to correcting the tasks together is neither motivating nor especially constructive for students. However, private learners in particular require detailed evaluation and feedback on their own (primarily written) work.
- “Photocopying” is a constant accompaniment to the work of language teachers. They spend a great deal of time copying tasks to replace or supplement those in the textbooks.
- The constant lack of time ultimately kicks back in the area of self-education. Only a fraction of teachers still have time for their own formal or informal training, for learning and adapting new methodological elements, or for trying out new tools and incorporating them into the classroom.

Appropriate tasks

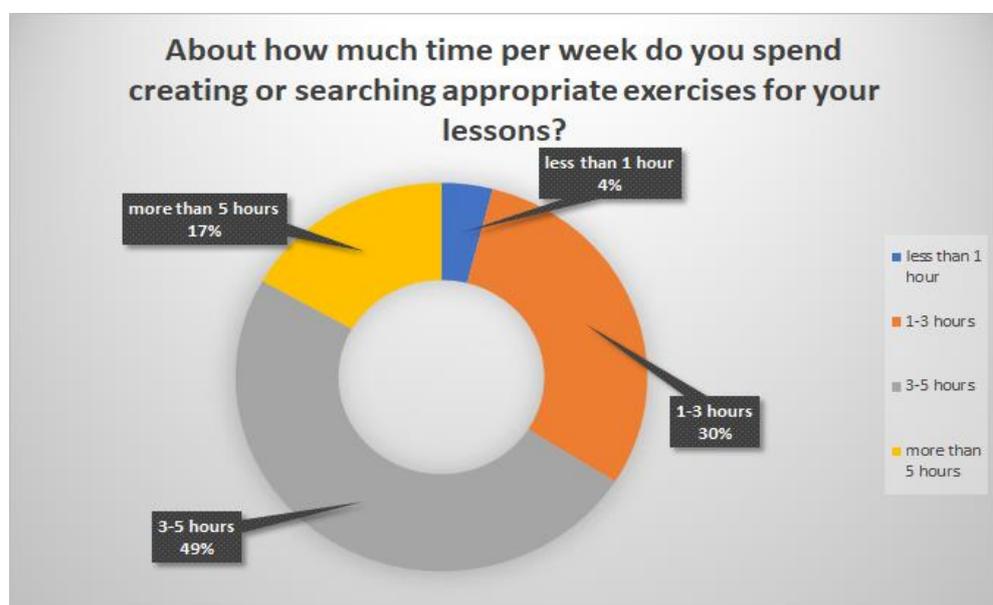
Regarding our research, out of the above, special attention should be paid to the time spent preparing for or giving lessons. There is a consensus among language teachers that constant renewal is needed in order to carry out their work effectively. Students demand up-to-date subject matter and topical lessons that also provide a broad expansion of vocabulary related to the topic as well as relevant grammar content. This requires structured arrangement and searchability of the existing task set and efficient access to new materials. Both areas represent a major problem for language teachers.

According to the statements, teachers have a huge number of prepared and already used assignments. They have dozens of folders filled with photocopies of previous assignments, and stored on their computers are enough tasks to take up hundreds of hours. However, none of these is systematized, and it is much easier, according to the accounts, to create newer and newer materials than to try to find relevant

ones for the given lesson amongst the existing materials. In addition, the subject matter of many of these materials soon loses its topicality. Thus, the vast majority of the tasks created are good for no more than a single use.

On the other hand, there is the challenge of finding new materials and tasks. The copying of items from earlier textbooks and workbooks has now been significantly supplemented by the practically unlimited supply of English language teaching and reference materials on the Internet. At first glance, a simple keyword search gives you instant access to the topic, grammar or type of task you want, including complete lesson plans and collections of tasks. However, the feedback from teachers is not so positive. Language teachers who actually take the needs, interests and knowledge level of their students or groups into consideration find it difficult to find truly relevant content. A lot of additional work must be put into the found materials before they become truly customized, and the common opinion must be emphasized as well that the average web content is unreliable and very often erroneous.

During the survey, teachers also reported significant time spent on preparation. Those teaching in public education have the least need for new materials. Private teachers, who go through the least amount of textbook packages but tend to arrange their lessons according to the needs of their students, emerged among those spending the most amount of time on preparation.



Time spent preparing or creating exercises for lessons

There is a clear range of demands and difficulties related to the tasks.

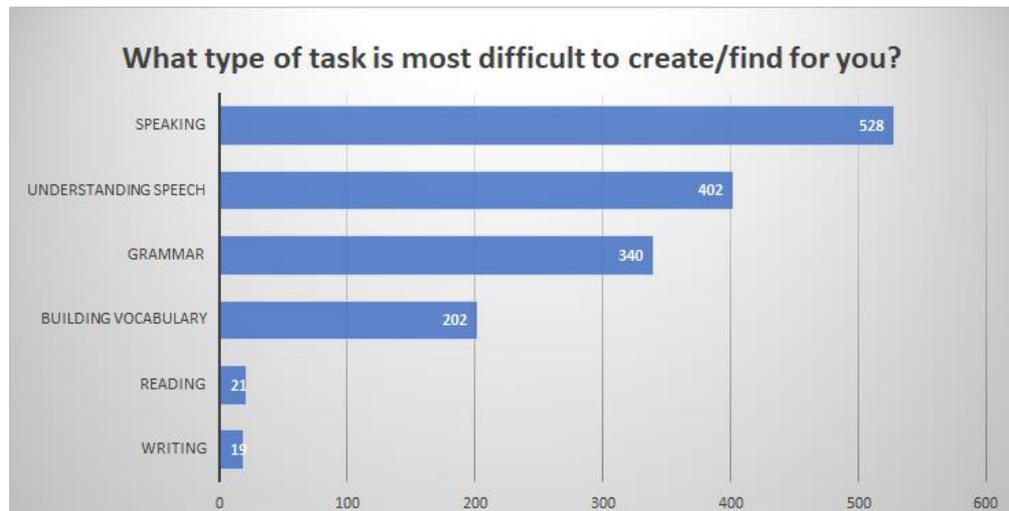
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- It is simplest for teachers to give, as well as come up with, written and reading comprehension assignments, as these are readily available on any topic, based on books, newspapers, textbooks or articles from the Internet.
- Vocabulary expansion can pose a challenge when teachers wish to take not only students' language level, but also their age and familiarity with the given topic into consideration.
- Due to the aforementioned erroneous exercises, grammar can present a problem, and it can also be difficult to match the depth of the grammar to the current level of knowledge of the student or group, as indicated by teachers.
- The really puzzling matter for language teachers is having students practice listening comprehension and speaking. These receive the least amount of emphasis in traditional language lessons, but the support for verbal communication, which is the most difficult obstacle for students to overcome, has been greatly improved by the presence of the internet. However, even in the case of easier listening comprehension, it is not straightforward to find audio material that is appropriate to the learner's level and vocabulary, ensures recognition of various pronunciations, and provides the opportunity to check that the listeners have correctly interpreted what they have heard. Furthermore, hardly any teachers are familiar with online methods that can be used to practice speech and conversation.



The challenges of covering each type of task

It is unequivocally necessary for higher-level or specialized language teachers to invest more and more energy into finding appropriate tasks, or rather tasks that can address students at differentiated levels from the same starting point.

Motivation

During the interviews, one of the central components of the challenges that language teachers face was motivation. According to the teachers, in addition to the normal trends in education and educability they are now encountering language learners with demands changing practically from one year to the next, and with ever newer motivational challenges. However, many of these can be directly or indirectly correlated with the digital world that is increasingly present in the students' lives and influences them to an increasingly greater degree.

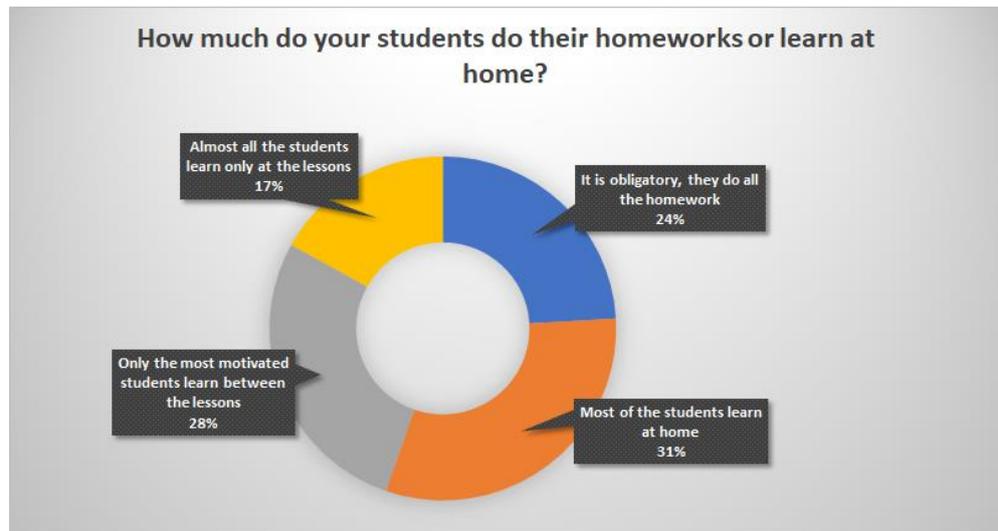
In terms of mentions, the most clearly identifiable problem areas, which of course cannot be finely separated from each other, showed close connections to as well as effects upon each other:

- Diversified, exciting lessons: students are no longer satisfied with the traditional lessons in which they do one task from the textbook after another or complete supplementary photocopied tasks. They would like to see and experience methods and tools adapted to the speed, variety and immediacy of their lives. In the absence of these, they become bored in no time.

- Keeping students' attention: seemingly closely related to the aforementioned, still, the teachers explicitly mentioned discipline and attention issues, which do not only arise in the case of school children or adolescents.
- Integration of new trends into the lessons: the teachers are only able to respond to the above if they incorporate the tools that students use in their everyday lives and the methods based on them. The vast majority of these are some kind of online or digital solution. However, the dependable and problem-free utilization of these in the classroom requires confident preparedness on the part of the teacher. Thus, the teachers need to put in extra effort to stay up-to-date with current trends, to master the use of new tools to a level to be able to integrate them seamlessly into the curriculum and, last but not least, to find the right points of contact for the planned curriculum. This requires not only extra time, but also an affinity for the use of digital devices (see relevant sections).
- Changing needs, growing expectations: changing needs do not only concern the applied tools, though. In an accelerated world, immediate results are also expected. A prominent competitive advantage is indicated by advertisements that promise a change in language competency that can be achieved "in one third of the time" or "without studying at home." In addition to rapid changes achieved with little energy investment, the need for immediate and continuous teacher feedback has also increased. In their studies, as with their mobile games, students want to see a constant increase in "points" and their results in the given field immediately.
- Uninteresting textbooks: textbooks and textbook families developed through years of scientific work are incapable of following topics of interest, the constant changes in the language and the increasing presence of slang. In particular, among private teachers and language schools that follow modern teaching methods, textbook-based courses are disappearing, and school education is also forced to rely on more and more supplementary materials. Students expect the language of the 21st century, topics and vocabulary related to current world events.

- Differentiation: there is a greater need than ever for group education to provide differentiated education based on knowledge level as well as motivation. Reaching the minimum level, keeping track of individual progress speeds, and nurturing talent again requires new tools and extra energy.
- Learners struggling with lack of time: this appears already at the secondary school level, but in adult education the students' extreme lack of time has become almost unprecedented. Cancelled lessons, absenteeism and dropouts have never been as prevalent as they are today. Research carried out among students clearly shows that an important reason for choosing online language learning applications is to follow one's own schedule. There is no need to comply with a fixed lesson time, and you can take a break from learning during more difficult times due to work or other engagements.
- Students do not study at home: the falling out of independent preparation is a special combination of lack of time and lack of motivation. A significant number of language teachers report that in spite of the considerable expectations mentioned above, language lessons remain almost the only stage for language learning; studying at home and doing homework tend more and more to be left behind. Some teachers do not even give homework assignments anymore, despite the fact that they themselves believe that if homework were more interesting, motivating, and easier to integrate into everyday life, it would encourage students to prepare work at home at a much higher rate.

The question on our questionnaire regarding this topic confirmed this supposition. Public education is more fortunate in this respect, as homework is compulsory there; for language school learners and private students, apart from those seriously preparing for language exams, whether they prepare at home depends on their motivation.



Tendency of language learners to study at home

- Smartphone use during lessons: there were no interviews in which the problem of students using their phones during lessons did not come up, a problem which appears practically everywhere, irrespective of age, social status and education. Numerous teachers have already tried methods to satisfy their students' to use devices. It is interesting to note that in a Hungarian higher education methodological application, the majority of applicants reported an educational method that provided students with tasks to be solved online during lectures and seminars, and as a result of the few minutes of mobile activity, they were better able to sit through the lesson without using their phones.

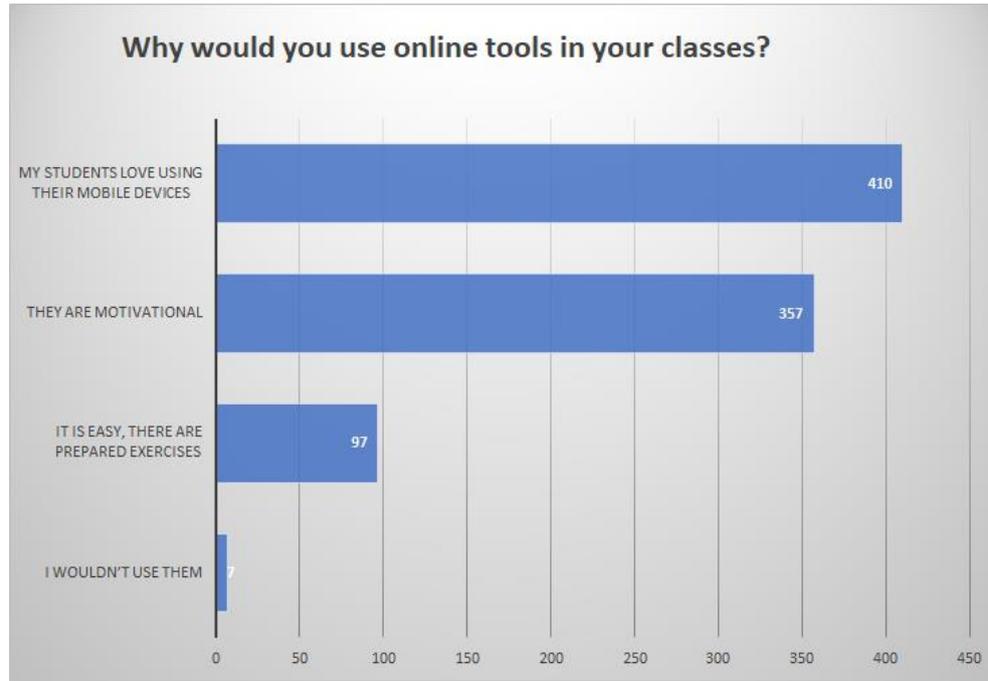
One of the questions of the survey precisely reflects this problem as well. Teachers would be happy to give online assignments because they not only find them motivating in themselves, but their students can also relate to an enjoyable activity.

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Teachers' motivators for using online tools

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In his study “Digital Natives, Digital Immigrants,” Marc Prensky gives the name “Digital Natives” to individuals who have been living among digital devices since birth. For them, dealing with modern technology does not constitute a problem. As far as educators are concerned, it can generally be said that most of them belong to the “Digital Immigrant” group, that is, they just learned how technology works. This implies a kind of digital gap between teachers and their students, via which the traditional teacher–student roles are reversed when the teacher asks for help on how to use digital tools. This situation can even be experienced by the teacher as a source of frustration, but it depends essentially on the perception and attitude of the teacher.

Although Prensky’s study was written in 2001, we consider it highly relevant to our current research and development. The author summarizes his experience in digital education in the USA, which is well ahead of Europe, and mentions subjects considered “obvious” in e-learning. In our view, the digitalization of language teaching in the geographical area that our research concerns is in the position mentioned in the article nearly two decades ago and faces similar challenges. Therefore, we consider it relevant to include some paragraphs from the article.

“But Digital Immigrants typically have very little appreciation for these new skills that the Natives have acquired and perfected through years of interaction and practice. These skills are almost totally foreign to the Immigrants, who themselves learned – and so choose to teach – slowly, step-by-step, one thing at a time, individually, and above all, seriously. “My students just don’t _____ like they used to,” Digital Immigrant educators grouse. I can’t get them to _____ or to _____. They have no appreciation for _____ or _____. (Fill in the blanks, there are a wide variety of choices.)

Digital Immigrants don’t believe their students can learn successfully while watching TV or listening to music, because they (the Immigrants) can’t. Of course not – they didn’t practice this skill constantly for all of their formative years. Digital Immigrants think learning can’t (or shouldn’t) be fun. Why should they – they didn’t spend their formative years learning with Sesame Street. Unfortunately for our Digital Immigrant teachers, the people sitting in

their classes grew up on the “twitch speed” of video games and MTV. They are used to the instantaneity of hypertext, downloaded music, phones in their pockets, a library on their laptops, beamed messages and instant messaging. They’ve been networked most or all of their lives. They have little patience for lectures, step-by-step logic, and “tell-test” instruction. Digital Immigrant teachers assume that learners are the same as they have always been, and that the same methods that worked for the teachers when they were students will work for their students now. But that assumption is no longer valid. Today’s learners are different. “Www.hungry.com” said a kindergarten student recently at lunchtime. “Every time I go to school I have to power down,” complains a high-school student. Is it that Digital Natives can’t pay attention, or that they choose not to? Often from the Natives’ point of view their Digital Immigrant instructors make their education not worth paying attention to compared to everything else they experience – and then they blame them for not paying attention! And, more and more, they won’t take it. “I went to a highly ranked college where all the professors came from MIT,” says a former student. “But all they did was read from their textbooks. I quit.” In the giddy internet bubble of only a short while ago – when jobs were plentiful, especially in the areas where school offered little help – this was a real possibility. But the dot-com dropouts are now returning to school. They will have to confront once again the Immigrant/Native divide, and have even more trouble given their recent experiences. And that will make it even harder to teach them – and all the Digital Natives already in the system – in the traditional fashion.

[...]

So unless we want to just forget about educating Digital Natives until they grow up and do it themselves, we had better confront this issue. And in so doing we need to reconsider both our methodology and our content.

First, our methodology. Today’s teachers have to learn to communicate in the language and style of their students. This doesn’t mean changing the meaning of what is important, or of good thinking skills. But it does mean going faster, less step-by step, more in parallel, with more random access, among other things.

[...]

But how many Digital Immigrants are prepared to teach it?

[...]

As educators, we need to be thinking about how to teach both Legacy and Future content in the language of the Digital Natives. The first involves a major translation and change of methodology; the second involves all that PLUS new content and thinking. It's not actually clear to me which is harder – "learning new stuff" or "learning new ways to do old stuff." I suspect it's the latter. So we have to invent, but not necessarily from scratch. Adapting materials to the language of Digital Natives has already been done successfully. My own preference for teaching Digital Natives is to invent computer games to do the job, even for the most serious content. After all, it's an idiom with which most of them are totally familiar.

[...]

We need to invent Digital Native methodologies for all subjects, at all levels, using our students to guide us. The process has already begun – I know college professors inventing games for teaching subjects ranging from math to engineering to the Spanish Inquisition. We need to find ways of publicizing and spreading their successes.

A frequent objection I hear from Digital Immigrant educators is "this approach is great for facts, but it wouldn't work for my subject." Nonsense. This is just rationalization and lack of imagination. In my talks I now include "thought experiments" where I invite professors and teachers to suggest a subject or topic, and I attempt – on the spot – to invent a game or other Digital Native method for learning it. Classical philosophy? Create a game in which the philosophers debate and the learners have to pick out what each would say. The Holocaust? Create a simulation where students role-play the meeting at Wannsee, or one where they can experience the true horror of the camps, as opposed to the films like Schindler's List. It's just dumb (and lazy) of educators – not to mention ineffective – to presume that (despite their traditions) the Digital Immigrant way is the only way to teach, and that the Digital Natives' "language" is not as capable as their own of encompassing any and every idea. So if Digital Immigrant educators really want to reach

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Digital Natives – i.e. all their students – they will have to change. It's high time for them to stop their grousing, and as the Nike motto of the Digital Native generation says, "Just do it!" They will succeed in the long run – and their successes will come that much sooner if their administrators support them."

Original source:

Digital Natives, Digital Immigrants By Marc Prensky From On the Horizon (MCB University Press, Vol. 9 No. 5, October 2001)© 2001 Marc Prensky (<https://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf>)

Therefore, all of this must lead to a change in which teachers not only understand the digital needs of their students and expand their array of tools accordingly, but also view their role differently. The teacher does not fill their usual role here, but is transformed into a kind of mentor who creates the ideal learning environment for the student, from which point it is the responsibility of the student to decide how to organize and plan the time dedicated to learning.

Responding teachers were essentially open about the relationship with the various digital technologies used for teaching, indicating how much they use digital aids in teaching on a scale of 1 to 10, and none of them indicated levels 1 and 2. Moreover, scores on the upper half of the scale are in the majority compared with the lower half. Levels 7 and 8 were indicated the most, which is indeed promising for the spread of digital teaching.

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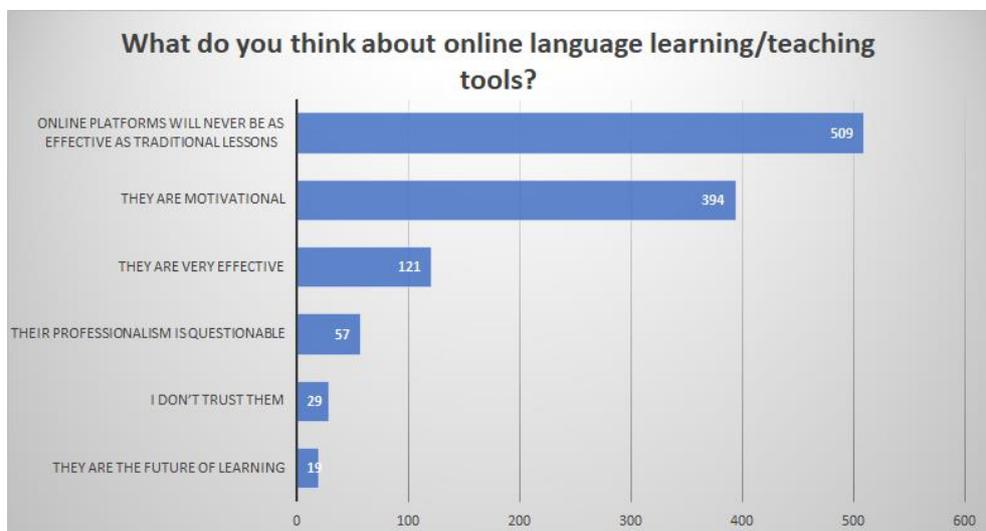
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Teachers' attitudes towards digital technology as a whole

However, the teachers agree that online interfaces will never be as effective as traditional language lessons, though they are motivating. A relatively large proportion of the teachers find the online interfaces exceedingly effective; however, very few of them see online education as the future of learning. At the same time, few teachers question their effectiveness, and mistrust of them is not typical either.



Teachers' value judgements of online teaching tools

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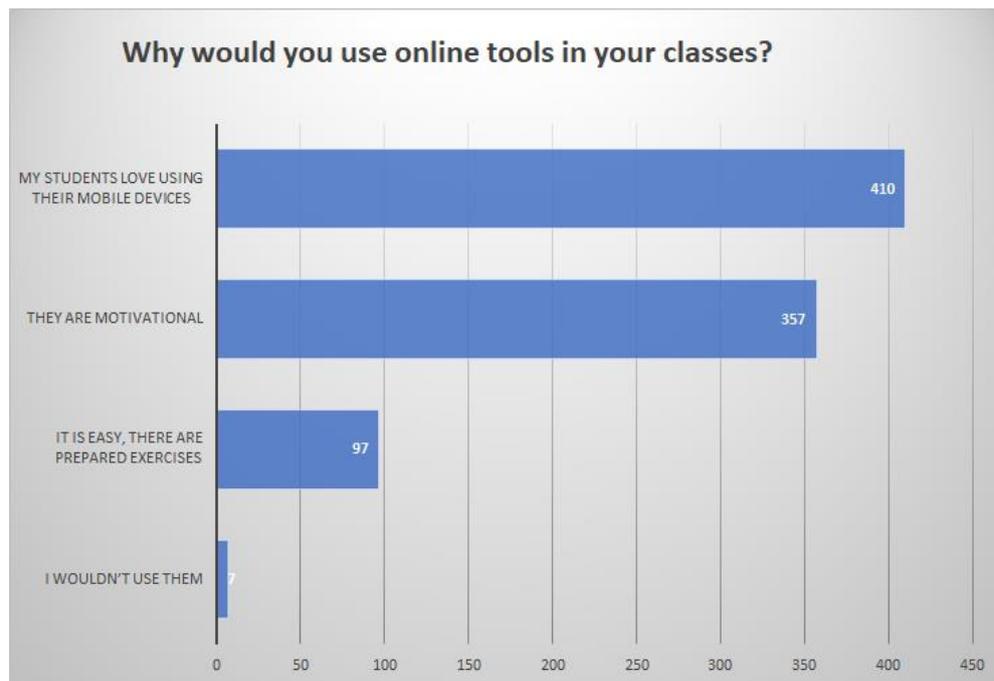
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After general attitudes and opinions, we asked what motivators would lead the language teachers filling out the questionnaire to use online tools in their classes. The proportion of respondents who dismissed this entirely is remarkably low.

Of the 573 respondents, 410 individuals answered that they would use online tools during the lessons because their students like to use mobile devices. This may be closely related to the fact that almost just as many believe that online tools serve as a form of motivation. Assessments conducted in other areas of education also show that these tools, when used by students in the classroom, pique students’ interest and hold their attention, and students can make use of their own creativity.

At the same time, the digital lagging behind of language teaching is evidenced by the fact that only 97 respondents like to use online tools because of the content they provide. Certain school subjects, natural sciences in particular, have many well-developed interfaces and content that are supported by educational methodologies, at practically every level of education. In contrast, there are hardly any platforms in language teaching that allow teachers and students to work together.

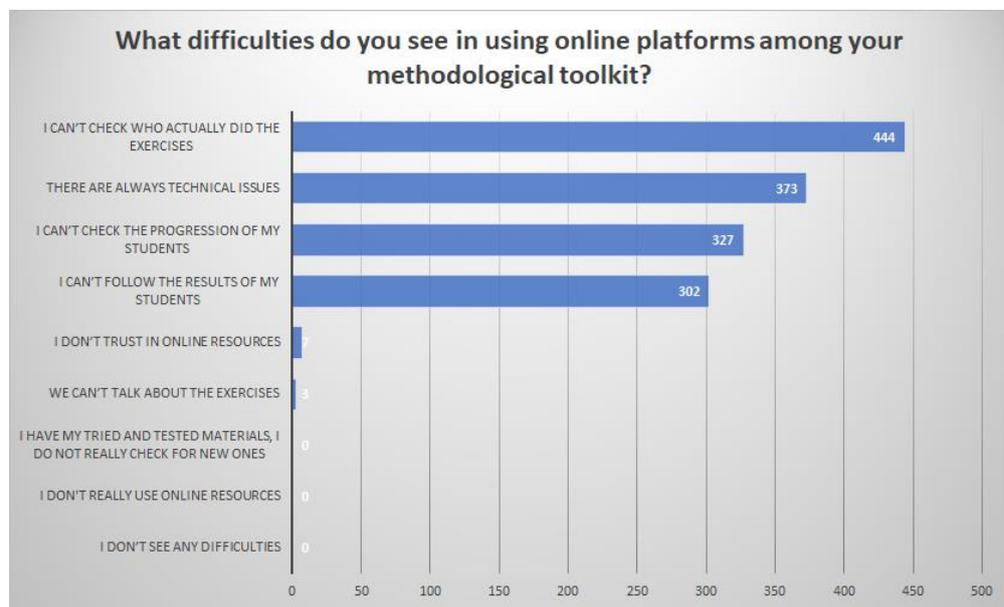


The advantages of using online tools

On the other hand, the majority of respondents see the difficulty in teaching with the assistance of online interfaces in not being able to follow who actually completed the assigned tasks in the online space. In addition, there is a significant fear of technical problems, which is a clear reference back to the uncertainty of digital immigrants.

The significant number of respondents who perceive the problem as a lack of ability to track the performance, progress and knowledge of their learners is of paramount importance to our project.

The distrust of online interfaces and the difficulty of discussing tasks together is quite low in their circles. The adherence to established teaching habits and the lack of use of online resources are so uncharacteristic that not one of the teachers noted these answers. However, it is also important to note that there are no respondents who do not see any difficulty in teaching with the help of online interfaces.



Disadvantages of using online tools

Despite the above-mentioned difficulties, almost every teacher had given their students online assignments at some point. Almost everyone employs the most obvious options, such as watching YouTube videos or reading assignments. However, in the personal interviews we also received responses saying that keeping track of the results of these and devising the related tasks is not so clear-cut.

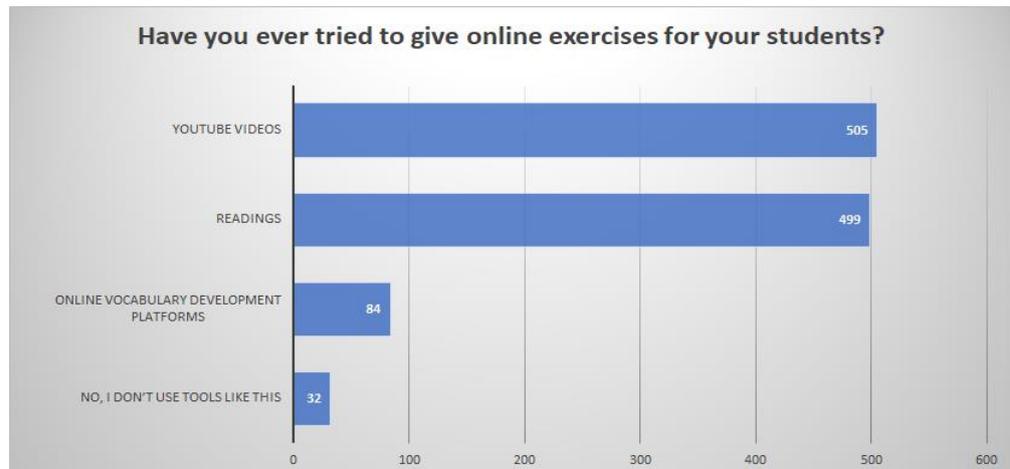
This inability to track results may also be the reason why few of the respondents include the relatively large number of available vocabulary expansion applications and websites in their toolkits.

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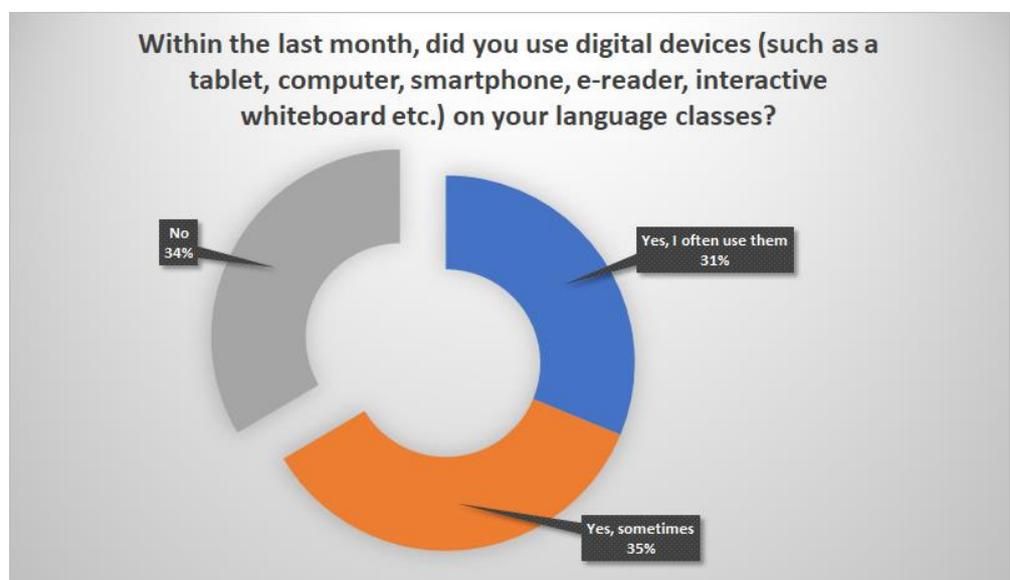
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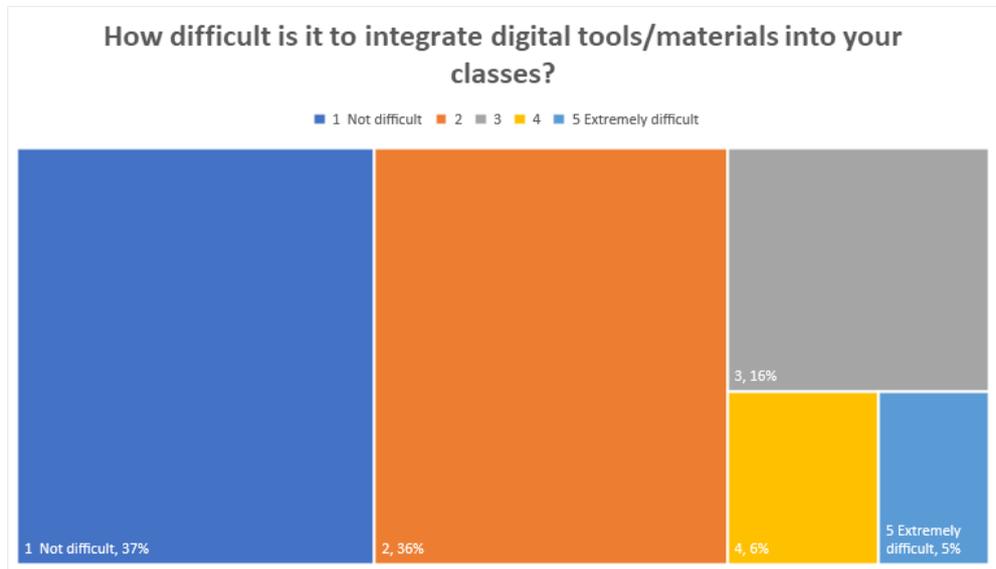
Digital methods that teachers have used

However, it seems clear that beyond the trying out of these methods, smart tools, for about one third of the responding teachers, have no place among the permanent fixtures of the methodological toolkits for teaching. At the same time, this picture is overshadowed by the fact that those who responded “no” to the question turned out primarily to be those teaching in public education, while every single private teacher and the bulk of language school teachers gave online assignments during the period preceding the response.



Use of digital devices in the period preceding the response

In spite of the fact that everyone had seen some kind of problem with digital devices before, on a scale of 1 to 5 almost three quarters of the teachers declared that tools and materials originating from online sources are relatively easy to integrate into the curriculum, meaning that the available materials can be adapted well into the traditional teaching methodology and subject matter. However, this poses a major challenge for about 10% of respondents, with the older age groups and those with more restricted forms of teaching being more prominent.



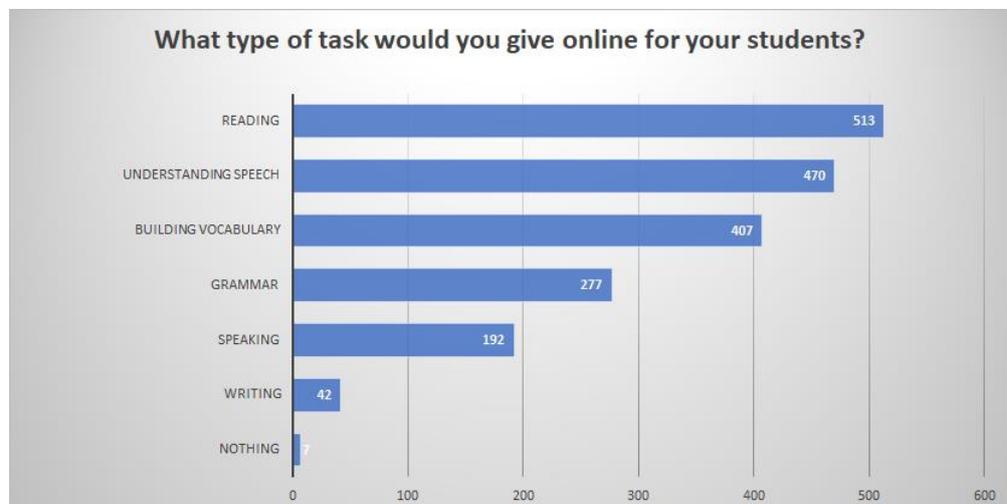
Difficulty of integrating digital tools into the curriculum

Closely related to the above is the question of what types of tasks and areas of development are most or least relevant to the introduction of online tools. Reading tasks, which was already indicated as preferred, is at the top of the list; almost all of the respondents marked this answer. Likewise, over 80% readily assign listening comprehension exercises, which correlates similarly with the popularity of assignments based on YouTube videos. The potential for vocabulary enhancement, as a relatively popular type of online exercise, is certainly related to the above.

Noteworthy is the surprisingly low proportion of responses concerning grammar exercises, favored only by 48% of respondents. However, an explanation is provided by the assessment of the questionnaire and the oral interviews. Despite the fact that a simple internet search brings up an inexhaustible amount of information for every grammar problem, most language teachers do not trust the professional appropriateness and correctness of this information. A significant

number of them mentioned that they have to put a greater deal of work into checking and correcting these and modifying them to the appropriate level for the given group or learner, than if they were to just create new tasks from scratch. There would be great demand among the teachers for possibilities to access content that is easy to assign and check and which comes from a trustworthy source.

Even though increasing the proportion of verbal communication tasks is one of the most significant challenges in the work of language teachers, online interfaces and the internet are still not considered to be development platforms that can be controlled and followed well. As regards writing tasks, the teachers for the most part stick to offline methods, and those who reject the idea completely correspond with those who previously expressed similar views.



The most preferred types of online tasks

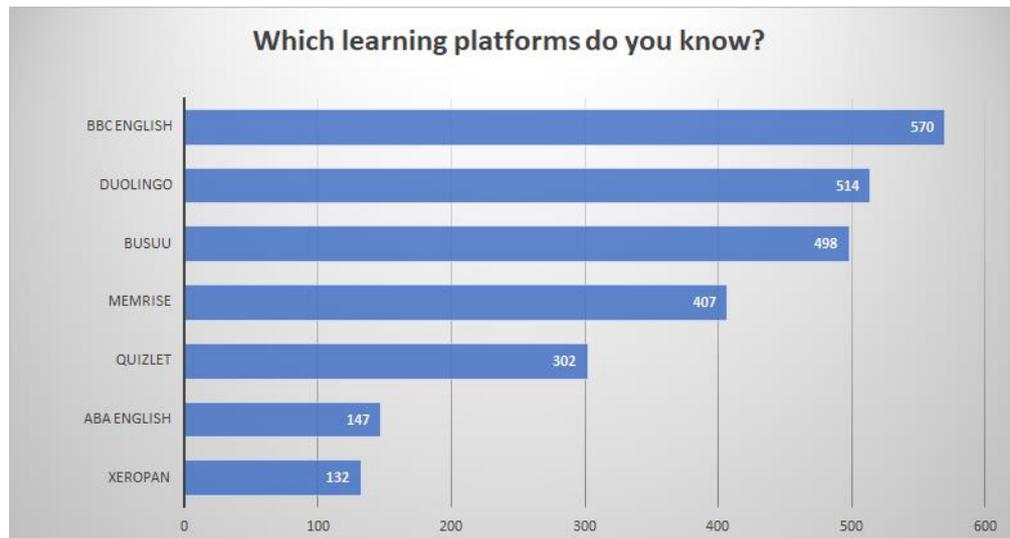
Online platforms and applications have already reached all of the teachers. There was no one from among the respondents who did not know at least one interface. Each of the options provided by us was given as an answer, and those who filled in the survey listed a number of further pages and applications among others.

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Language-learning platforms known to teachers

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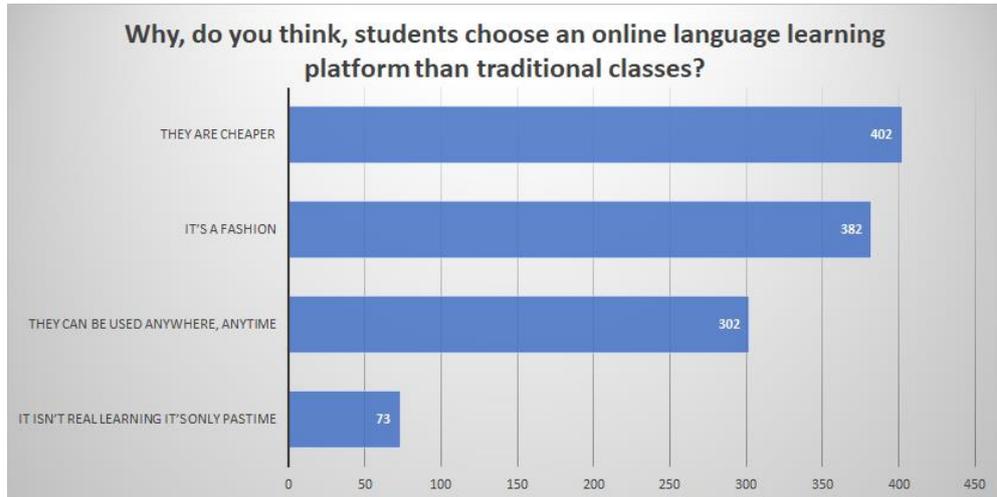
In the next section of our research, we asked about the Digital Native vs. Digital Immigrant relationship presented in the previous section, and the views, attitudes and support of the teachers.

We find it important to note that, according to the study, the two circles do not necessarily differ in age. Unlike public education, in the case of language schools and private teaching the age of the teacher and the student is in many cases similar, and oftentimes the traditional order is reversed and younger teachers teach older students. Still, the majority of the teachers who were interviewed almost always rated themselves as less active than their students when comparing their knowledge of the online world, the use of digital devices, and the demand for such things.

As one of the natural consequences of increasing globalization, every year more and more people feel the need to acquire foreign languages and thus become language learners. It is a worldwide trend that more and more language learners opt for applications that are available online and on smart devices over traditional language-school learning. However, an increasing number of newcomers to the language learning market are those who think of language learning applications as solitary alternatives. In our question group, we tried to find out how language teachers see this trend and how they try to become involved in this process.

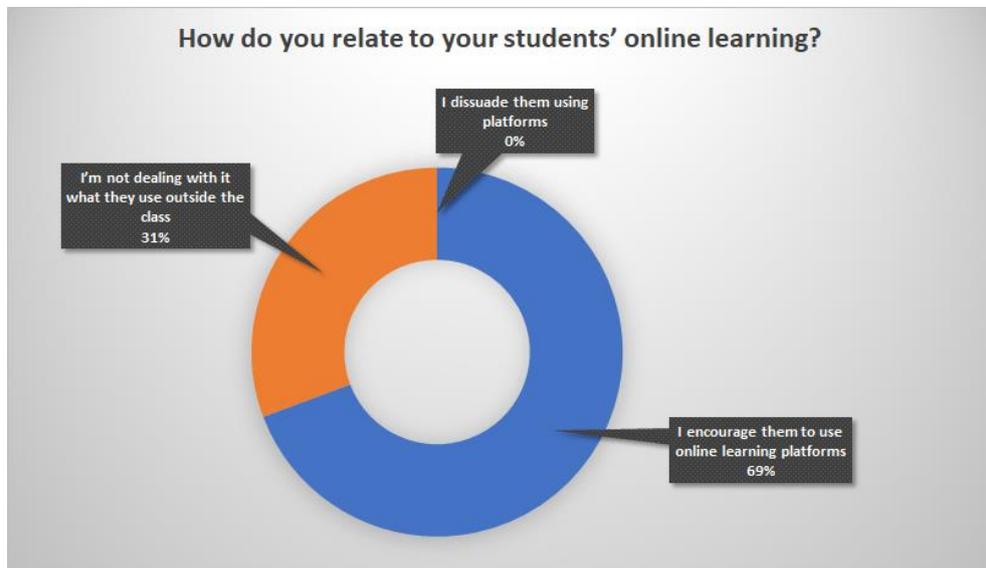
The majority of the respondents believe that the reason students use language learning applications and participate in various online language learning courses is because those are less of a financial burden, i.e. they are cheaper than traditional language classes. More than half of the teachers also consider it a relevant factor that learning with apps is not restricted by space and time, that they are accessible anywhere and anytime.

It is significant that two thirds of the respondents say that the reason for the change is the current fashion, and a relatively high proportion of them, namely 12%, believe that using online platforms cannot really be viewed as a learning activity, but rather as a form of pastime.



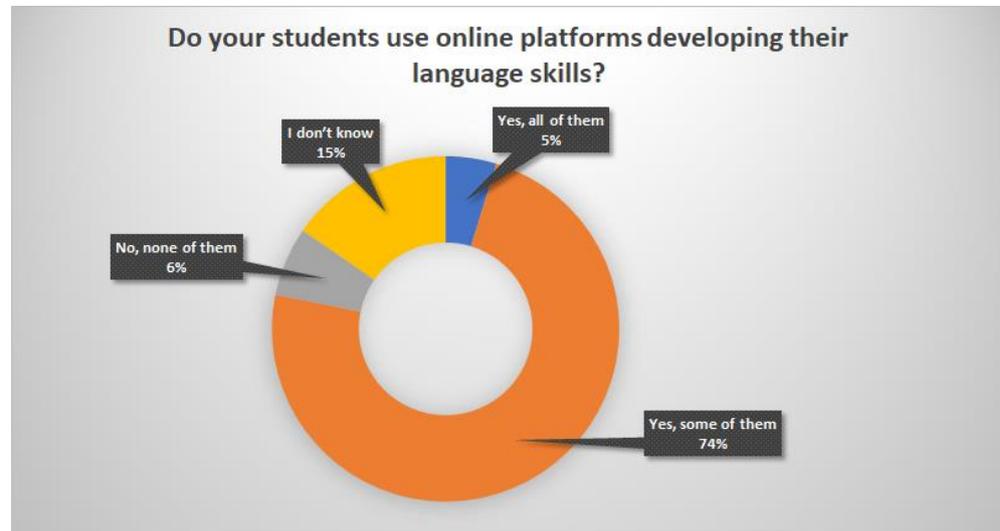
Teachers' views on why learners choose online platforms

In contrast to the previously-expressed mistrust and difficulties, one of the most positive findings of the research is that 69% of the language teachers explicitly encourage their students to use online platforms. Many interviewees stated that they have seen significant differences in performance between those who use other learning platforms in addition to the traditional lessons and those who study exclusively during class. Indifferent teachers, who constitute almost one-third, largely come from public education, where they are more likely to teach lower grades. All of the private teachers fall among those who encourage supplemental learning, and even those who in their previous responses rejected digital methods do not object to their students using them.



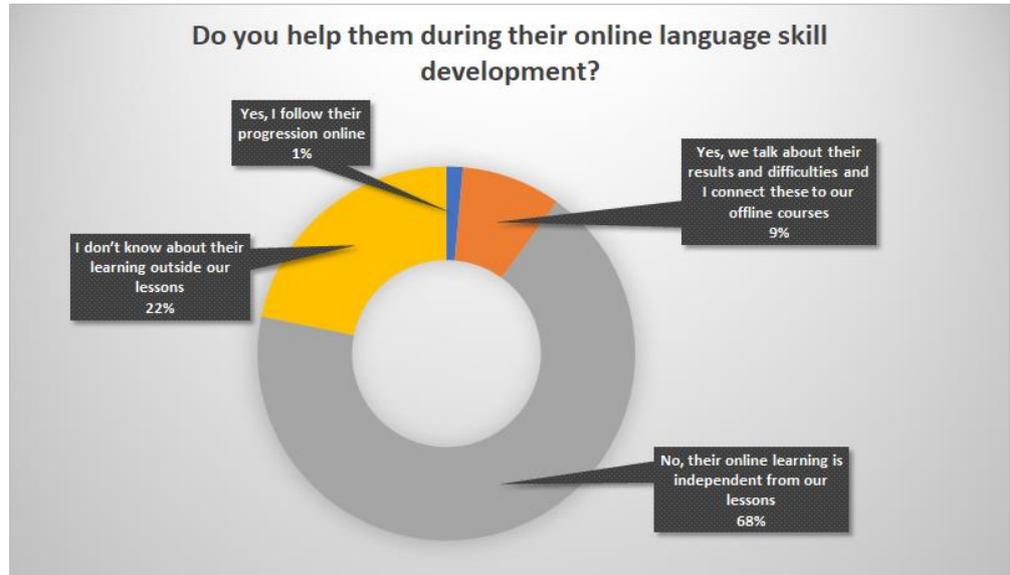
How much teachers recommend using online platforms

Nearly 80% of the teachers do not only recommend their students to use applications, but are also aware that their students choose this method to strengthen their language knowledge. In addition, some of them are consciously using digital solutions as a complement to their own methodology. This line is typically emphasized in private teaching and language school education.



Where applications are present in education

The next level of commitment is if the teacher not only knows about, but also helps with the tasks that their students complete on other platforms. The positive response of 10% clearly indicates openness and acceptance of new methods. However, as concerns this project, the telling value is the 77% of teachers who are unable or unwilling to directly track the online progress of their learners.



Teachers' connection to students' online activities

FEATURES OF THE APPLICATION

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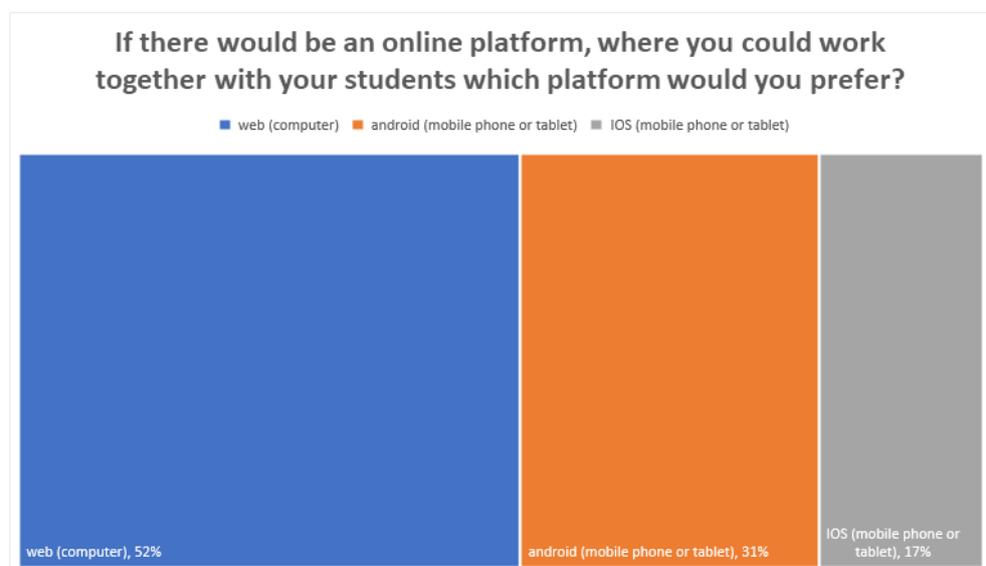
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Given that the primary goal of our project was to develop the Nexus software suite, the interviews with language teachers focused primarily on the features that would help them track and support their learners' online language learning and that be able to respond to their concerns and needs as outlined above.

In this context, we also included similar questions in our questionnaire, knowing that, in terms of the interviewees knowing much less about the concept of Nexus, it would result in less accurate and conscious responses.

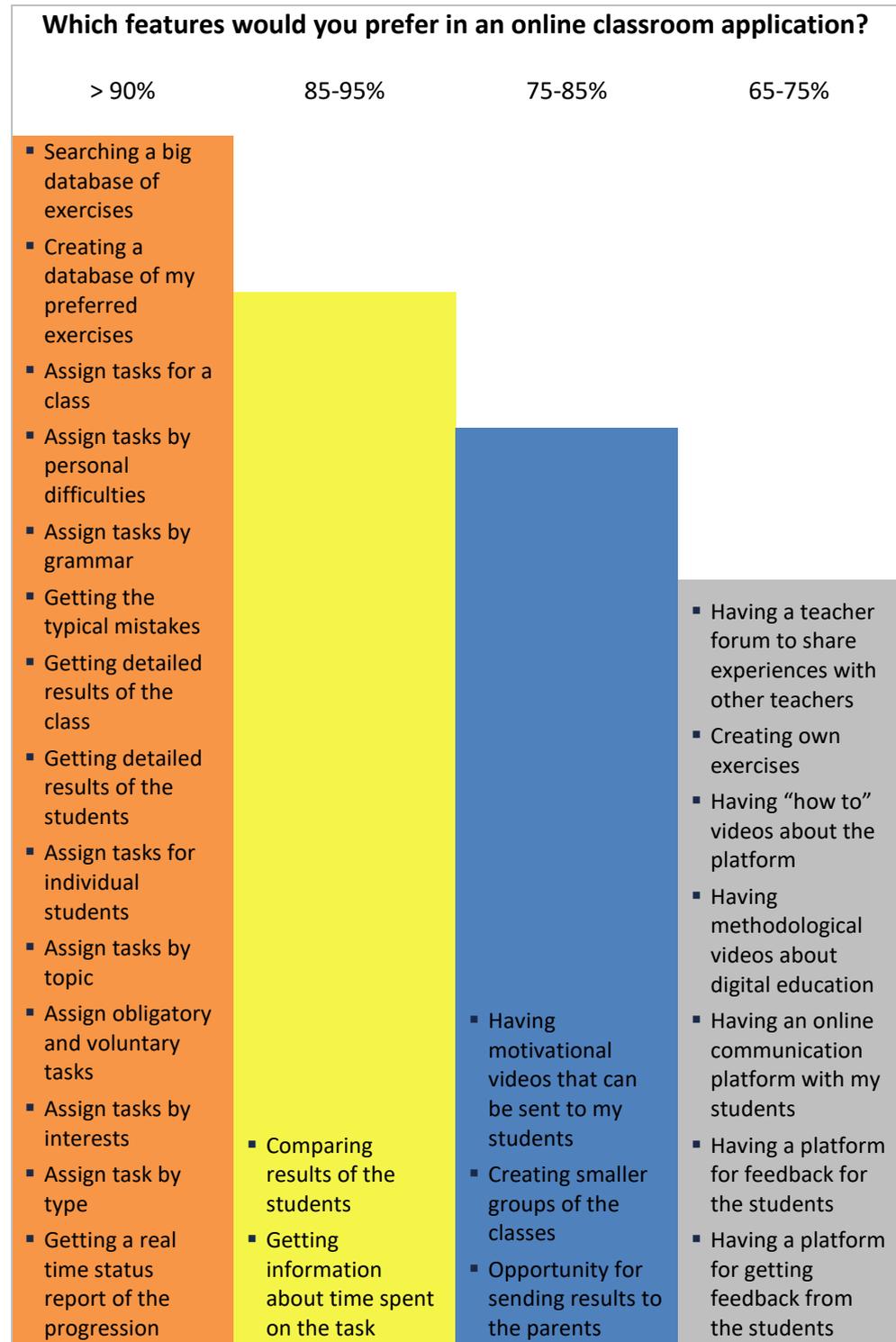
The following is a brief summary of the information that influenced the ultimate specification of the software suite.

Our vision for the development platforms has been reinforced by the fact that more than half of the language teachers use a web-based solution for tracking their students and giving assignments. The platform providing the greatest overview and which is primarily used on a computer remained our primarily developmental platform. Respondents in different European countries opted for apps running on Android and iOS-based mobile phones. Even if Android received more responses overall, both major platforms are of great interest. We do not plan to develop for other mobile phone operating systems due to their dwindling number of users.



Preferred platforms

We provided numerous alternatives when designing the list of features of the Nexus software suite. The following summary is the result of the questionnaires, with which the observations from the interviews closely correlate. That values in this case indicate the proportion of respondents who would choose each feature in a potential application.



Features requested by the teachers

SUMMARY OF THE MAIN FINDINGS

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The observations from the questionnaire and the personal interviews led to concordant results and mostly supported our preliminary assumptions.

Language teaching lags quite a bit behind other subjects supported by digital tools despite the fact that a significant number of online applications are already available to learners. Teachers are slowly catching up with the online world and unequivocally feel themselves to be at a disadvantage against the digital literacy of their students. At the same time, they feel strongly about the need for change, on both the motivational and the methodological and content side.

Our idea of creating platforms that are able to provide an educational environment for teachers and learners in a single space has been reinforced and been given feedback as a result of the research. As long as students use online interfaces, which apply modern technology and are developing at an unprecedented speed, in isolation, without control or assistance, teachers will have extremely limited opportunities to incorporate digital technology into their methodological toolkits. Most language teachers openly and gladly move forward, but this requires the appropriate interfaces and support. If they are provided with professional tools similar to the widely used textbook series and are convinced of the usefulness of these tools, the mistrust that is observable today can easily be replaced by a commitment to the benefits that are offered and to the features that provide relevant answers to their existing problems.

HOW TO NEXT

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The accepted developmental specification of the Nexus Software Suite was developed based on the feature/value matrix that was prepared on the basis of the responses and observations. Numerous features were left that came up in the interviews and could indeed be valuable elements, but the scope of this project limits the developmental possibilities.

After the specification phase of the project, IT developers will take over the lead. Nexus will be released on all three platforms in late 2020 with a long test period. Our associated partner is Xeropan, the language learning platform which will be the first connected to Nexus. Xeropan is made available for a limited period of time free of charge for the students of the teachers participating in the test. All the participating teachers will be offered a free Xeropan account for 10 of their students for a 6-8 month long educational session. As students start to learn, their usage data is processed ensuring proper information for the teachers. The videos can be used during this time.

During the testing phase we will be in continuous contact with the teachers, helping them to manage and check their students' work and asking them to share their experiences, opinions and suggestions.

Most of the respondents of the questionnaire and the interviewees have undertaken to become testers but we still welcome further testers.

You can apply on the project site:

language teachers.eu

NEXUS FEATURES

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Based on the research in the specification section, Nexus will be developed with the following features.

- **Creating and managing accounts of classrooms and private students**
- **Class overview**
 - assigned and performed tasks
 - obligatory and voluntary
 - common and personal
 - deadline, progress, completion rate
 - results
 - completion time, overall results, results by phrase
 - best results in the class
 - next up in the curriculum for the class
 - by topic, level, objectives, duration
 - Tasks suggested based on the students' interest
 - by topic, level, objectives, duration
 - Tasks suggested based on the students' previous results
 - grammar practice, vocabulary practice
 - Class progression
 - classroom leaderboard, strongest grammar skills, weakest grammar skills and suggested tasks, strongest vocabulary, weakest vocabulary and suggested tasks
- **Personal student platform with personal learning and interest information**
 - assigned and performed tasks
 - obligatory and voluntary
 - common and personal
 - deadline, progress, completion rate
 - results
 - completion time, overall results, results by phrase
 - next up in the curriculum for the student
 - by topic, level, objectives, duration
 - Tasks suggested based on the student's interest
 - by topic, level, objectives, duration

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- Tasks suggested based on the student’s previous results
 - grammar practice, vocabulary practice
 - Student progression
 - strongest grammar skills, weakest grammar skills and suggested tasks, vocabulary state, strongest vocabulary, weakest vocabulary and suggested tasks
 - Student activity, time spent in the application, last activity time
- **Excercises**
 - Search
 - by title, task type, level, topic, grammar, phrases
 - Assign
 - for a class or just selected students
 - obligatory, voluntary
 - with deadline
 - notification for the students
 - modify assignment
 - **Classroom message board, classroom chat platform**
 - text, pictures, links