Guidelines for digital foreign language learning and teaching and virtual pupils' exchange

Contents

DIGI-LINGO background info[1]

Who are the guidelines for?[2]

This text is intended for various stakeholders. First, foreign language teachers who will ideally start utilising some of the specific guidelines, tools and platforms in their classroom or employ them to enhance their classroom practice and validate its correctness. Additionally, headmasters, school policy teams, and even school boards play a crucial role in enabling foreign language teachers to give the best digital and virtual education possible[3]. It is they who, amongst other things, must provide room for sufficient professionalisation. Last but not least, digital and virtual foreign language education can only flourish, when government education policy adequately addresses the field's specific requirements.

When talking about foreign language teachers, we distinguish three distinct target groups, according to their familiarity with digital foreign language learning, their so-called digital maturity:

- **Absolute beginners**[4]: Foreign language teachers that might need convincing to join the school's ICT development plan and/or need training in the usage of ICT. They seldom use the internet to find suitable sources for teaching and learning;
- **Users**: Foreign language teachers that already use ICT in an effective and structured way. They are able to identify and assess suitable sources using basic criteria;
- **Pioneers**: Foreign language teachers who know most about using ICT in an effective and structured way and also spontaneously experiment a lot with new tools and approaches.
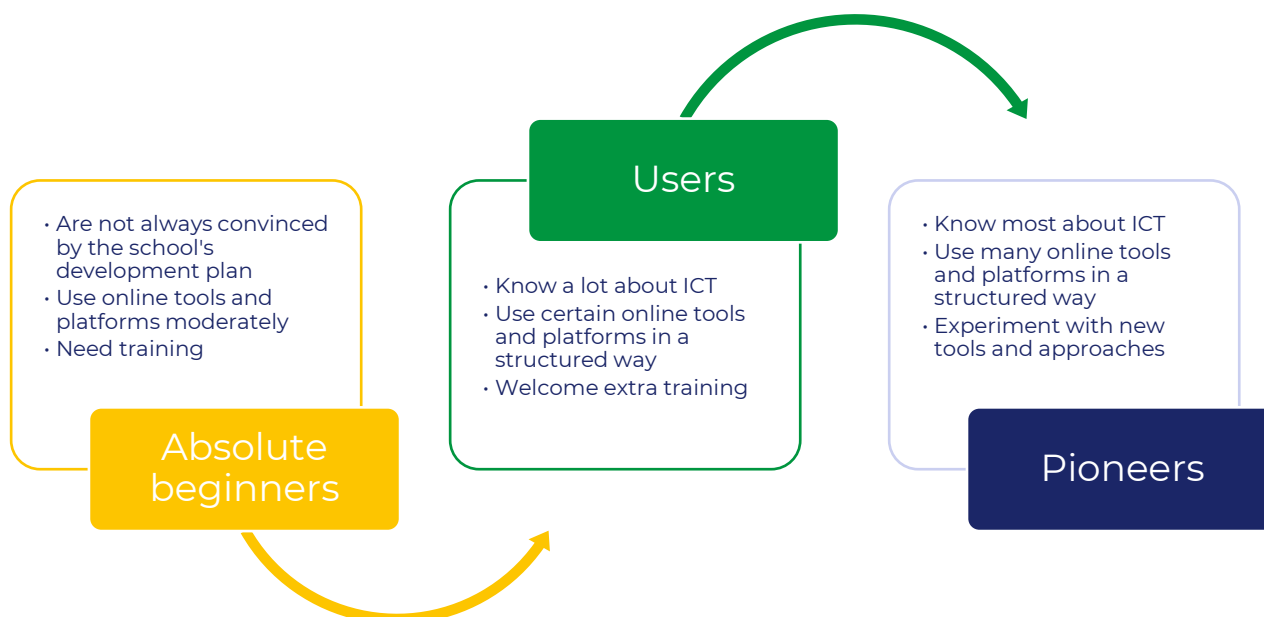
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[1] Graphic provided by GO! in-house graphic design team.
[2] This obviously is a 'continuum,' and the goal is to advance step by step, possibly to a further stage of expertise. For the sake of clarity, the target group is limited to these three groups.
[3] See chapter 'On school policy'.
[4] Digital Education Action Plan (2021 -202 7); DigCompEdu

Users
- Know a lot about ICT
- Use certain online tools and platforms in a structured way
- Welcome extra training

Absolute beginners
- Are not always convinced by the school's development plan
- Use online tools and platforms moderately
- Need training

Pioneers
- Know most about ICT
- Use many online tools and platforms in a structured way
- Experiment with new tools and approaches

What lies at the heart of the guidelines?

- **Foreign language curriculum objectives** of each country/region: communicative, lexical, grammatical and sometimes also attitudinal goals;
- **Awareness** for the many challenges involved in engaging pupils in digital foreign language learning activities and tailoring to pupils' individual needs;[5]
- **Ambition for high quality digital foreign language teaching and learning**.[6]

What do the guidelines look like?

- **Broad**: Applicable to a wide range of language topics and socially inclusive;
- **Unlimited**: Not restricted to a specific foreign language, language learning level or country/region;
- **Tangible**: Immediately deployable on the classroom floor and understandable.

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[5] GO! Pro - Gepersonaliseerd samen leren - De 5 bouwstenen
[6] E-lang: Pedagogical approach for the use of digital tools and resources in the context of language teaching and learning: ECML-Programme > Programme 2016 - 2019 > Digital literacy; Substitution, Augmentation, Modification, and Redefinition model (SAMR) e.g. Hamilton, E. R., Rosenberg, J. M., & Akcaoglu, M. (2016). The substitution augmentation modification redefinition (SAMR) model: A critical review and suggestions for its use.TechTrends, 60(5), 433-441. SAMR

DIGI-LINGO, the beginning[7]

This chapter is about the project's context, objectives and ambitions.

Foreign language education seems to be declining in **higher secondary education**.[8] Few pupils are interested in language studies and PISA results might be in freefall.[9] Is that because

• of a lack of genuine and authentic communicative opportunities?
• pupils just do not read anymore, in their L1[10] or a foreign language?[11]
• pupils in general are too scared to communicate?[12]
• too many people regard languages merely as a tool?
• artificial intelligence applications[13] take away the necessity of putting in 'language milage' in order to excel?
• of the dominance of the English language in the entertainment industry, on social media and in the scientific and academic world: might no other languages are needed to get by?
• more films, series and shows are dubbed in the pupils' mother tongue, so they don't really feel the need to study a foreign language?
• one has to invest a lot of time in learning a language: learning a new language as a teenager is much harder than as a child?

Or might there be other reasons? Learning foreign languages and their cultures can really make a difference. It:

• helps one grow: it broadens your mind by fostering cultural awareness, mutual understanding of how people act and for what reason, inclusion and social cohesion, all of which is essential in today's fast-evolving technological society[14] with its migration tendencies;[15]

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[7] Graphic provided by GO! in-house graphic design team.
[8] Foreign language learning in the European Union Key data on teaching languages at school in Europe – 2023 edition Note: Foreign language education seems to be declining in higher education as well. Few students are interested in language studies, even though there is a shortage of language teachers in many countries/regions. This aspect is not integrated in the guidelines, since this is not in the focus.
[9] Foreign Language Assessment - PISA To be expected soon. However, regional and national surveys already indicate lower number in interest and competence.
[10] Mother tongue.
[11] PIRLS 2021
[12] Foreign Language Classroom Anxiety Scale
[13] Artificial Intelligence Act: Council calls for promoting safe AI that respects fundamental rights
[14] Key competence s for 21st-century citizens
[15] About multilingualism policy

- provides one with countless professional opportunities;[16]
- increases one's cognitive abilities, such as flexibility, problem solving, abstract and creative thinking;
- allows one to communicate thoughts, feelings and needs better, making the communication more refined and harmonious, one nuance at a time;
- stimulates one to read current newspaper articles and be more in the present;

Last but not least, it is also great fun of course.

The DIGI-LINGO project tries to come up with a possible solution to **revalue foreign language learning and teaching** in secondary education and facilitate language teaching by:

- integrating digital technology (e.g. visual and video materials, worksheets, digital exercises) in foreign language classes;
- making its teachers more digitally literate.

DIGI-LINGO is not about projecting the partners' beliefs in the necessity of digital and virtual education. DIGI-LINGO is about pursuing evidence-informed education and testing digital didactics for its effectiveness. This means trying out different tools and platforms, experimenting with learning paths, adjusting and optimising. In doing so, DIGI-LINGO aims to secure the many good digital practices stimulated by the COVID-19 pandemic and the end of 2023's artificial intelligence (AI) evolution. Because, when used thoughtfully[17], AI does facilitate and stimulate the writing[18] and speaking process.

Now, it is always important to tackle digitalisation in education with great care.[19] Digital foreign language learning and collaboration is the complement, the icing on the cake. The recommendations and guidelines therefore do not strive to replace all offline foreign language activities.

Pupils' motivation in higher secondary education will often decrease when learning solely online compared to blended learning. The social aspect of a lesson, the lack of interaction with peers and teachers and active participation in the lessons e.g., when not explicitly stimulated and guarded, then impacts their performance negatively. To facilitate connection amongst the pupils and between the pupils and the teachers, it is important to alternate between synchronous and asynchronous teaching and learning activities. Asynchronous learning activities do offer many advantages in terms of ownership and flexibility, but may increase the sense of distance.

At the **core of DIGI-LINGO** one can find a unique combination of
- **21st century digital skills**;[20]
- **competences for democratic culture**[21] (with focus on interculturality);
- **deeper learning** (as modified in the DIGI-LINGO framework[22]);
- **pupils' self-regulation** (with emphasis on clear goalsetting, self-control and self-evaluation).

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[16] Five reasons why learning a language can boost your employability
[17] EU AI Act
[18] It may pose a threat though to writing when used as a replacement.
[19] https://dirkvandammeedu.net/wp-content/uploads/2021/05/Pak-digitalisering-in-het-onderwijs-doordacht-aan-VOKAEconocom-4-mei-2021.pdf; Onderwijsonderzoeken
[20] Skills for the future of work in the 21st century
[21] https://coe.int/en/web/campaign-free-to-speak-safe-to-learn/reference-framework-of-competences-for-democratic-culture
[22] See 'DIGI-LINGO Analytical framework and identification of best practices'.

DIGI-LINGO has so far developed a framework, recommendations and guidelines, based on a scientific literature survey and the results of teachers' and pupils' questionnaires. All of these products are meant to help realise the **foreign language curriculum objectives** of each country/region better. The ambition is to aim for **high quality digital foreign language teaching and learning and virtual pupils' exchange as a complement**[23] while also raising awareness for the many challenges involved in engaging pupils in digital foreign language learning activities and tailoring to their individual needs. It is clear, that the needs of the teachers are very important. Their TPACK[24] (content knowledge, pedagogical knowledge and technical knowledge) must be in balance to be able to give a good lesson.

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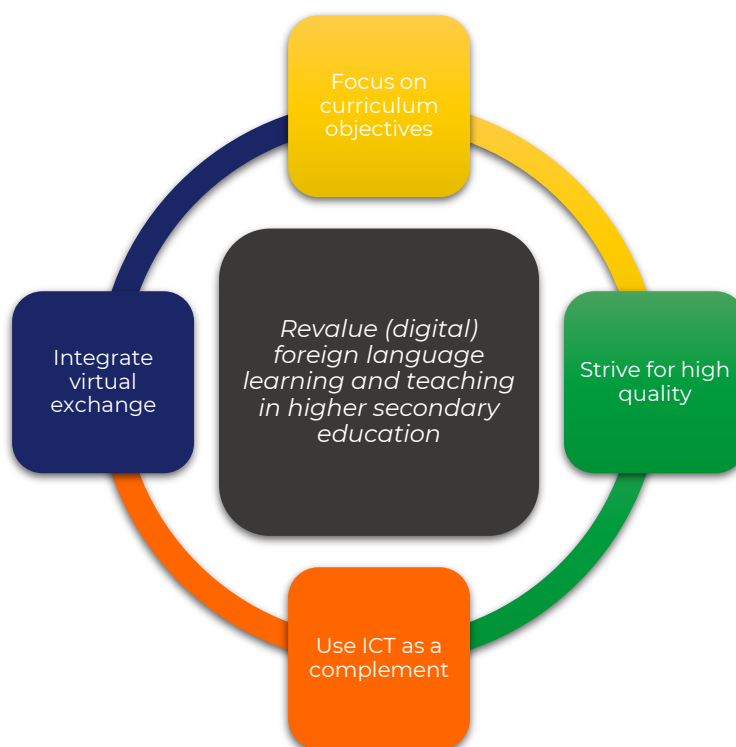
[23] Blended learning involves both physical (classroom face to face learning) and online learning.
[24] Koehler, M., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPACK)?. Contemporary issues in technology and teacher education, 9(1), 60-70. / Kennisnet. (2014). Four in balance monitor. Zoetermeer, The Netherlands: Kennisnet Foundation. / Kennisnet. (2011). ICT in het schoolplan. https://www.kennisnet.nl/app/uploads/kennisnet/publicatie/Ict_in_het_schoolplan.pdf / Kennisnet. (2015). Het Vier in balans-model: optimaal rendement met ICT. https://www.kennisnet.nl/artikel/6863/het-vier-in-balans-model-optimaal-rendement-met-ict/

DIGI-LINGO recommendations[25]

The DIGI-LINGO framework[26] and results of the pupils' and teachers' questionnaires[27] have led to the following DIGI-LINGO recommendations. So, these recommendations sprout from the literature review and school surveys and are addressed to policy makers in Europe.
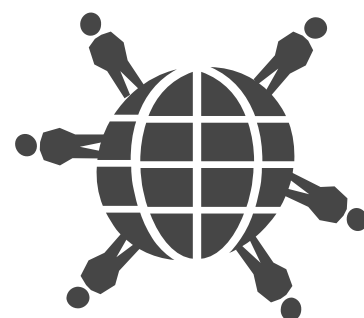
Recommendation 1: Offer foreign language teachers sufficient professional development opportunities with regard to blended learning, and online tools and virtual platforms most suitable for language education

Focus on

- Deeper learning (as modified by the DIGI-LINGO group);
- 21st century digital skills[28];
- Virtual exchange platforms.[29]

Recommendation 2: Offer foreign language teachers sufficient professional development opportunities with regard to a number of items that are very important in language education

- Pupils' self-regulation (with special attention to clear goalsetting, differentiation, self-control and self-evaluation);
- A democratic culture (with focus on interculturality);
- Pupils' involvement in the design and execution of lessons, also with regard to assessment.

To successfully implement the teacher training in the classroom, one needs to work on teachers' knowledge, skills, attitudes, and values and take into account the specific context of their school so that pupils become well equipped to navigate the complexities of the current digital and virtual landscape more effectively.

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[25] Image provided by Central Denmark Region in-house graphic design team.
[26] See 'DIGI-LINGO Analytical framework and identification of best practices'.
[27] See 'DIGI-LINGO Results and recommendations based on questionnaires'.
[28] Learning Compass 2030
[29] To work on participation, interaction and interculturality.

DIGI-LINGO guidelines

Guideline 1: Expand foreign language teachers' knowledge on deeper learning[30] and 21st century digital skills[31]

The so-called 'PTDL model' is a pedagogical approach that aims to develop students' multilingual competence through learning pathways. PTDL stands for **Pluriliteracies Teaching for Deeper Learning**. The model is based on four dimensions: cognitive development, linguistic progression, learning design and learning support. The model seeks to promote deeper learning by integrating content, language and thinking in different subject areas. The PTDL model is especially relevant for multilingual classrooms, where students have different linguistic and cultural backgrounds[32]. DIGI-LINGO has therefore incorporated deeper learning into its framework and questionnaires.

Within the PTDL model one can find the following items that correspond with good foreign language education

- Communication
- Intercultural perspective
- Authentic material
- Diverse text genres
- Student involvement/ personalisation
- Diversity and motivation

Teaching pupils how to use several **language-specific strategies** such as memory, cognitive, compensation, metacognitive, affective and social strategies, remains a very important part of foreign language education, both offline and online. When teaching a good digital language lesson, one's **technical content knowledge, technical pedagogical knowledge and technical knowledge** (TPACK) also must be in balance. Knowing which are the necessary steps for pupils to learn new vocabulary or grammar e.g. and how to best go about them (activating pupils' prior knowledge digitally or not and if digitally, which tool to use) is key to a good foreign language lesson.

Effective didactics

Technology enhances effective teaching principles by combining text and images, interactive 3D models and 360° scenario's (following Mayer's[33] principles), using examples (such as videos), providing structured instruction (advanced organisers), assisting with challenging tasks (like interactive videos or VR exercises when undertaking public speaking), and offering testing and feedback (including auto-corrected questions). While this approach reduces teacher workload, it also requires substantial investment and a definite shift in mindset, as outlined in the 'school policy' section. This requires thorough insight into effective didactics.

However, it is not only the technical aspects foreign language teachers struggle with. It is also understanding which tools and platforms support their teaching best and keeping up with the

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[30] As modified by the DIGI-LINGO steering group and associate partner schools and organisations.
[31] Digital competence: the vital 21st-century skill for teachers and students
[32] Source: Bing Chat Enterprise, October 3. 2023.
[33] Mayer's 12 Principles of Multimedia Learning

fast-evolving digital world. New tools and platforms are launched on a daily basis and it is understandable that people are daunted. Digital competence is a vital 21st century skill for both teachers and pupils.[34]

TPACK MODEL
Technological Pedagogical Content Knowledge

Technical knowledge

Pedagogical knowledge

Content knowledge

Context

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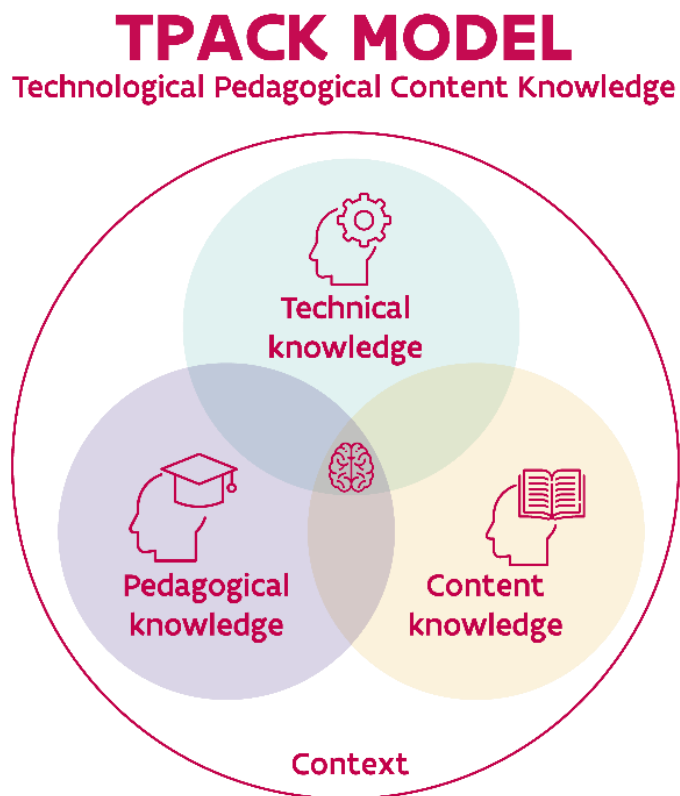
[34] Graphics provided by the GO! in-house graphic design team.

TPACK MODEL
Technological Pedagogical Content Knowledge

TPK
The way you select and manage technology

TCK
The way you integrate technology in your foreign language course

Technical knowledge
The way you select and use technology. Fit for foreign language education

Pedagogical knowledge
The way you plan and facilitate the learning of foreign languages

Content knowledge
Everything you know as a teacher about foreign language education

PCK
The way you facilitate the instruction

Context

Guideline 2: Offer foreign language teachers sufficient professional development opportunities with regard to blended learning, and online tools[35] and virtual platforms most suitable for language education

Balancing Digital Tools and Pedagogy in Foreign Language Teaching

UNESCO defines digital literacy as the ability to safely and appropriately access, manage, integrate, communicate, evaluate, and create information using digital technologies. This encompasses competences like computer literacy, ICT literacy, information literacy, and media literacy. The **Digital Competence Framework for Educators[36]** extends beyond literacy, empowering European teachers to self-assess their digital skills. Being digitally skilled means using technology critically, collaboratively, and creatively across five domains: information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving[37].

In foreign language teaching, **variety and discernment matter**. Teachers need to avoid monotony by using different tools, whilst not overwhelming themselves or their pupils. One should remember that the tool is a means to an end and pedagogical value and efficiency are prioritised. Sometimes, pen and paper can be just as effective. The most important question is whether the tool makes the learning more efficient. Does it effectively help realise the foreign language attainment targets?

When selecting digital learning tools, one needs to consider these four key aspects[38]:
- Effectiveness: Choose tools that align with learning objectives and enhance outcomes (cf. effective didactics);
- Efficiency: Optimise learning time and cost without compromising effectiveness as well as optimise teaching/coaching time, on condition that well-designed lessons incorporate digital automation for the improvement of tasks or instructional videos;
- Empowerment: Select tools that support autonomy, self-regulation, and metacognition.

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[35] See 'DIGI-LINGO tools suggestions'.
[36] DigComp : the EU Digital Competence Framework
[37] A must read: Guidelines for teachers and educators on tackling disinformation and promoting digital literacy through education and training - Publications Office of the EU (europa.eu)
[38] Martin Valcke, Digitaal leren, 2023

Despite being **digital natives**, many pupils are familiar only with specific search engines and tools. Not all can proficiently use cloud storage, retrieve information, or process and sometimes assess digital content[39]. Therefore, teachers need to lead by example to encourage exploration of diverse tools and platforms. However, they don't need to be an expert in every tool[40]; adaptability matters more than pioneering expertise.

When introducing AI in language learning it is important to discuss AI's role with pupils, advantages, disadvantages, as well as threats and emphasize the importance of human interaction and cultural immersion[41].

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[39] Blended learning in Flemish education
[40] Digital Education Action Plan (2021 -2027).
[41] PBD GO!, *ChatGPT, handvaten voor leraren in de klas*, 2023 and
WEF_Shaping_the_Future_of_Learning_2024.pdf (weforum.org)

Guideline 3: Involve pupils in the design and execution of foreign language education, also with regard to assessment

Navigating Digital Tools in Foreign Language Education: Balancing Engagement and Learning

To meet government and regional requirements and effectively monitor pupils' learning, begin with the **curriculum objectives** in your foreign language classes. Enhance pupils' communication skills—reception, production, and interaction—by leveraging visual aids, digital tools, collaborative techniques and task-based teaching.

Activate their pre-existing knowledge, model effective communication, and allocate more time for answering questions. Engage in **reflections** about the purpose of digital communicative tasks and activities, helping pupils recognise genre-specific characteristics, modes, and language styles necessary for successful task completion. Provide clear, structured and challenging instruction and use examples.

When incorporating new digital tools and platforms, consider whether pupils are **genuinely engaged** with the learning objectives or if it's merely a superficial involvement. Reflect on whether the focus remains on the educational content or if game elements and creative forms dominate. Strive for deep reflection and understanding rather than mere speed in responses when gamification is integrated into the assessment.

Blend formative and summative **assessment**. Formative and summative evaluation can both be about process and product. The difference between formative and summative lies in whether or not the obtained data are included in attestation (or decision-making), when talking about formative they are not and in summative they are. Involve pupils in self-assessment and peer assessment. Consider external organisations, such as internship providers, to assess pupils as well. Utilise rubrics, digital portfolios, and other instruments for extensive and comprehensive evaluation.

In a blended learning environment as well or perhaps even more, clear learning objectives are crucial. **Effective 'feed'** (feed up, feedback, feed forward) motivates pupils. Beyond evaluating the end product, focus on the process and metacognitive development.
Peer feedback reinforces learning. Regularly seek pupil input on transparency and weight of questions, in order to optimise fairness and effectiveness of the evaluation, adjusting criteria when needed[42].

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[42] Blended learning in Flemish education

While digital assessment offers data insights, beware of question variety limitations. There are some **digital assessment challenges** to reckon with. For instance, it is sometimes very difficult to get the solution process, the strategy used, clear in a digital evaluation. Usually the answers are purely product-oriented, i.e. focused on the end result. Foster active participation through pupil-centred approaches, diverse exercises, cooperative learning, and gamification. Leverage audio and video feedback for comprehensive and engaging responses, while keeping in mind that for some pupils this type of feedback may be daunting. Therefore, always start with positive feedback, indicate what the pupil has already done well - even if the whole thing is still inadequate - and only then indicate the working points.

Guideline 4: Expand foreign language teachers' competences to work on pupils' self-regulation with special attention to clear goalsetting, differentiation, self-control and self-evaluation

Fostering Autonomy and Self-Regulated Learning in Blended Foreign Language Education

In the dynamic landscape of **blended learning[43]**, where pupils seamlessly transition between online and face-to-face activities, autonomy plays a pivotal role. Regular monitoring through online questionnaires and conversations is essential. Utilize a central online platform for communication and as a launchpad for learning activities. Ensure that these activities follow a recognizable, recurring structure, and visualize progress on a dashboard to enhance motivation.

Self-regulated learning[44] constitutes another critical aspect of high-quality digital foreign language teaching and virtual student exchanges. As Barry Zimmerman asserts, self-regulation transcends mere skill—it's the self-directed process by which learners transform mental abilities into academic prowess. It encompasses self-awareness, self-motivation, and the behavioural acumen to apply acquired knowledge effectively[45]. In practical terms, when pupils believe in their ability to succeed, set clear goals, employ effective language strategies, monitor progress diligently, analyse successes and failures, and learn from them, their language acquisition improves significantly.

Teachers play a vital role in nurturing self-regulation. They empower pupils to learn independently, encourage regular self-assessment of processes and final outcomes, and explore pupils' self-perceptions as language learners. However, self-regulation isn't a standalone solution. In digital language education, it thrives when supported by clear learning objectives, transparent lesson structures, effective communication, valid evaluation, constructive feedback, differentiation (both during and after lessons), and attention to pupils' social well-being and motivation.

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[43] Blended learning in Flemish education
[44] Attaining Self-Regulation: A Social Cognitive Perspective
[45] Becoming a Self-Regulated Learner

17

The significance of **differentiation** cannot be overstated. Differentiation is the way in which a "foreign language teacher consciously, positively and systematically deals with the cognitive, metacognitive, motivational and cultural differences between learners. Focusing on interest (i.e. motivation, the reason why one learns), learning status (prior knowledge regarding the attainment targets and one's capabilities) and learning profile (preferences and strategies on how to learn) when teaching, will undoubtedly make pupils become better at foreign language learning. Self-regulated learning can be significantly enhanced through adaptive learning paths that necessitate distinct routes to achieve the ultimate goal. Furthermore, providing additional support for those who require it, based on critical moments where learning progress is assessed and technology responds, enables differentiation. In this context, differentiation also facilitates self-regulated learning for a broader range of learners.

Digital education serves as a lever for **personalised learning** as well as collaborative learning, but the challenge of implementing effective self-regulated learning extends beyond individual teachers. It demands a collective effort from the entire school team[46].

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[46] SRL with Ed Tech - IO4 Design principles & User stories (install-ed.eu)

Guideline 5: Expand foreign language teachers' competences to work on a democratic culture with focus on interculturality[47]

In foreign language education, a wide range of descriptive, informative, instructive, narrative, persuasive, expository and multimodal texts is used to work on pupils' communication skills. Which **texts** one uses and how many may differ according to the curriculum but the basis usually is the same across countries. Examples of good **digital texts** include lyrics, voice or text messages, podcasts, video clips, YouTube fragments, newspaper articles, magazine articles, book excerpts, video interviews, TV news, opinion pieces, blogs, advertisements, social media posts … They make foreign language tasks more meaningful for pupils and convey cultural value.

Authentic digital texts usually are richer in both language and content than digital texts created for pedagogical purposes that are often simplified or shortened. Authenticity is key to exposing pupils to real-world language usage. However, what is appropriate for a particular group of pupils is determined by the attainment targets of a country/national region. So in some cases, authentic texts are not advocated as they are far more challenging than the attainment targets require.

In order to promote **inclusive citizenship** amongst pupils in higher secondary education and to create **cross-cultural collaboration and communication**, **intercultural understanding** is an essential component. All teachers—not just those who teach foreign languages—should try to foster **intercultural competence** in their pupils. The objective is to better comprehend multicultural interaction, social identities, and effective communication, not just to transmit information, facts and traditions about certain regions and countries. Intercultural understanding is also very much about beliefs, values and attitudes such as respect, sincerity, equality, openness, commitment and involvement.

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[47] Image obtained from Google search: all creative commons.

To effectively teach a culture and stimulate intercultural understanding, foreign language teachers do not necessarily need to be experts in that culture/all cultures. Instead, it suffices that they create activities and learning environments that promote discussion amongst their pupils on topics like social inequality, poverty and sustainability issues. They can do so by not only selecting digital texts according to the lexical and grammatical level of difficulty and the cultural content but by using more diverse texts, based on the interests and **identities[48]** of their pupils and the **civic value[49]** of the text. This will stimulate **deeper learning**, create many neural networks one after the other, and promote real equity and inclusion. This will also positively impact their attitudes and behaviour and enhance their motivation and well-being.

Help your pupils relate to texts by asking them to draw **connections** between the texts and their own lives, experiences, or cultural backgrounds. This personal connection may deepen their engagement and understanding. Of course, respect for differences is essential in this context. Create a foreign classroom environment where pupils feel **safe** to share their perspectives, even if they differ from the themes or viewpoints in the texts. Explicitly encourage respectful dialogue and openness to **diverse perspectives**. Use questioning strategies to stimulate the discussion: Encourage pupils to answer open-ended questions about the text that require **critical thinking, analysis, and interpretation**. For example, "Why do you think the author chose this particular perspective?" or "What societal issues is this text addressing?" Use **comparative analysis**: Have your pupils compare and contrast multiple texts on a similar topic or theme and identify commonalities, differences, and patterns among the countries/populations/languages. This is in line with the aims of active citizenship, where critical, informed and constructive dialogue is central and where teachers seize opportunities to explore perspectives on identity, diversity and challenges associated with a democratic society through this very dialogue.

While doing so, it is important that foreign language teachers know their own **cultural and linguistic identity** well and **avoid stereotypes and prejudices**. Strategies include starting with familiar situations and reimagining them in unfamiliar contexts, role-playing and helping pupils ask appropriate questions. To effectively engage with pupils and families, it is crucial to ask questions and allow them to express their identities. This is especially important for so-called "Third Culture Kids"[50] who spend most of their developmental years outside their parents' culture, which influences their identity (to varying degrees). These children come from e.g. bi/multicultural or bi/multiracial homes or are children of immigrants, refugees, minorities or international adoptees. Understanding all these different identities is essential for understanding the **cultural differences** in and outside the classroom and fostering real learner-teacher partnerships.

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[48] Their linguistic, cultural and socio-economic background.
[49] Appealing to their civic responsibility.
[50] Third Culture Kids

Guideline 6: Encourage the use of virtual exchange platforms in foreign language education to work on participation, interaction and interculturality

Virtual exchange platforms provide pupils with the unique opportunity to interact with **native speakers** and immerse themselves in **authentic cultural contexts**, regardless of physical location, in partnership with other schools within the country/region or Europe wide. To effectively implement virtual exchanges, one would better partner with global institutions since this gives pupils more opportunities to engage in conversations with native speakers, provide **structured conversational activities** that not only practice language skills but also discuss cultural topics and share experiences, integrate **360 degrees tours** throughout the school, city, province and other places of interest e.g., ensure **reflection** and promote **self-awareness and critical thinking** through journaling, blogs or discussions.

Teachers need to ask themselves: Does the tool I use to bring my pupils together with other pupils across regions and borders really extend their learning and learning environment? Does it bring the outside world into the classroom, provide authenticity and valuable content? Is the effort put into the exchange worth the result? Other items to reflect upon, preferably together with pupils, are 'inappropriate' platforms for school collaboration, such as social media, and the fact that in some cases it is easier to secure the **linguistic match** interacting with someone who is also learning the foreign language instead of being a native speakers.

Virtual exchange offers a lot of opportunities, instead of face-to-face exchange, or before or after a live exchange. But the preparation and monitoring of the process takes up quite some time and there is always a risk involved that pupils do not 'match' linguistically. So make sure to check the **Common European Framework of Reference for Languages**: Learning, teaching, assessment (CEFR)[51] , set clear goals, provide a clear structure and offer clear communication[52].

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[51] The CEFR Levels
[52] E.g. through eTwinning | European School Education Platform.

The **virtual exchange component of the DIGI-LINGO Framework of Foreign Language Teaching** and Learning might very well be the answer to the above mentioned challenges. This platform aims to reduce the administrative burden on individual teachers by anchoring support at local and regional authorities. Teachers can utilise the organisational model that has been established to not only connect with potential partners more efficiently but also be equipped with all the necessary elements required for setting up such virtual exchanges.

Virtual exchanges enrich foreign language learning experiences, foster transnational learning, and facilitate the sharing of best practices. By incorporating virtual exchange, the DIGI-LINGO Framework promotes **a more sustainable, community-driven approach to foreign language education, enhancing pupil engagement and intercultural competences**.

DIGI-LINGO tools suggestions[53]

These are suggestions for free tools, most suitable for foreign language education[54]. The tools have been categorised from functionality to provide a transparent overview. However, it is important to note that some tools may belong to multiple subcategories and this is not an exhaustive list.

In a digital ecosystem one has two levels:

1. The learning Management System (LMS) such as Smartschool, Moodle or Microsoft Teams. These are software platforms, designed for managing online courses, distributing course materials, and facilitating collaboration between pupils and teachers. These are crucial for self-regulated learning and differentiation because, in some cases, they enable adaptive learning paths.
2. The tools linked to the LMS or used as an addition. They provide additional functionality for pedagogy, creating new learning content or provide on-platform productivity functionality such as reading progress to support reading, check-in of learning status on class level and presentation tools.

These tools may be divided into the following subcategories:

1. General productivity tools with word processing, spreadsheets (Excel) and presentation capabilities (PowerPoint) such as Microsoft Suite, Google and Apple suite.
2. Didactic tools to help pupils check-into the lesson, exit (assess what they have learned and reflect on ideas for improvement) and interact and collaborate. These are mainly the communication, collaboration, polling, quizzes and interaction tools you find below.
3. Content creation tools which are further divided into two subcategories
4. Authoring tools such as Xerte, H5P, BrightBook and BookWidgets which provide structure and interoperability and make it easier for teachers to create interactive content, e.g. videos, quizzes, games without possessing programming skills.
5. Multimedia creation tools with which teachers can edit video, images, photos, 360°scenarios, 3D models, audio, etc. These are embedded into authoring tools so that one can build the necessary instruction and structure around them according to TPACK.

AI-powered chatbots that function as conversation tools[55]

1. ChatGPT: developed by OpenAI.
2. Copilot: developed by Microsoft.
3. Gemini: developed by Google.

Speaking and video stimuli

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[53] Image provided by Central Denmark Region in-house graphic design team.
[54] Some nuance is needed: 'free' tools do not actually exist. There is always a revenue model behind them. Usually, tools are limited in the number of users and the number and type of videos you can create, for example. Screencastify, for instance, is currently limited to 10 free videos to create. So, all the tools we list here do have limited 'free' use.
[55] One chatbot which we would like to mention, though not free, is VirtualSpeech. This makes pupils interact with AI driven chatbots in more authentic contexts, e.g. AI-Powered Roleplay Exercises for Soft Skills.

1. Edpuzzle: This is a tool to edit videos from YouTube, record your own videos, build in questions and assessments based on that content and give instant feedback.
2. Flip (formerly Flipgrid): This is a video discussion and video sharing app.
3. Loom: This is a video messaging and screen recording tool.
4. PechaKucha: This is a Japanese presentation format.
5. Screencastify: This is a screen recording and video editing tool.
6. ScreenPal: This is a highly versatile screen recording tool that is ideal for a flipped classroom.
7. Moovly This is a Flemish screen recording and video editing tool.

Collaboration
1. CryptPad: This is an open source online editor that is end-to-end encrypted and makes collaborative editing in real-time possible.
2. Etherpad: This is a customisable open source online editor making collaborative editing in real-time possible.
3. eTwinning: The platform for collaboration and learning with schools from other European countries.
4. Google classroom: a cloud-based platform by Google
5. LessonUp: This is a nearly free interactive presentation platform where presentations, questions, quizzes, polls and assignments can be posted.
6. Microsoft Teams: a cloud-based platform by Microsoft 365
7. MindMeister: This is a brainstorming, project planning and time management tool.
8. Miro: This is an online visual workspace that makes collaborative editing in real-time possible.
9. Wordwall: This is a collaborative online platform.

Communication
1. ClassDojo: a messaging app
2. Classroomscreen: This is a collaborative online whiteboard with applications to collect feedback, support your time management, and more.
3. Padlet: This is a collaborative online notice, whiteboard and Q&A board.
4. Slack: a messaging app
5. Zoom: a cloud-based platform
6. Reading Coach in Immersive Reader: This is implemented in the Microsoft environment and is very interesting in function of digital inclusion.

Polling
1. Mentimeter: This is a word clouds, live and instant polling, quizzes and surveys creator.
2. Slido: This is a live and instant polling creator.
3. Wooclap: This is a multiple choice question, live and instant polling, brainstorming, and more creator.

Quizzes
1. Kahoot: This is a multiple choice-style quizzes creator.
2. Quizizz: This is a quiz creation tool to which gamification, meme editing, and music picks have been added to make this a more immersive experience for pupils.
3. Quizlet: This is a flashcards, multiple choice-style quizzes creator that also contains a 'spell' mode (the tool will speak aloud a word and the pupil is then required to type out the spelling of it) and a 'match' mode (the pupils need to pair up correct words or a mix of words and images).
4. Socrative: This is a quiz system designed for live interactions and feedback.

Interaction
1. Keamk: This is a random and balanced team creator that stimulates interaction and reflection of all pupils.

2. Quick, Draw!: This is a game that uses machine learning to recognise doodling and gives verbalised guesses.
3. Wheel Decide: This is an online spinner tool that stimulates interaction and reflection of all pupils.

Multimedia (creation)
1. Google Cardboard app: This is a virtual reality tool.
2. Google Expeditions and Tour Builder: This tool not only helps your pupils virtually visit different locations but offers a huge list of experiences that includes topics in social studies, science, the arts, and career and technical education.
3. ThingLink: This tool helps you create your own interactive images, videos and 360° media.

AI and other images
1. DALL·E: This is an AI system that can create realistic images and art from a description in natural language.
2. Firefly: This is an AI system that can create realistic images and art from a description in natural language.
3. Stable Diffusion: This is an AI system that can create realistic images and art from a description in natural language.
4. Hero Forge Custom Miniatures: This is a rich character creator.
5. Quick, Draw!: This is a game that uses machine learning to recognise doodling and gives verbalised guesses.
6. Adobe Express: This tool creates photo essays, trip reports, portfolios, newsletters, athletics announcements, and more.
7. Canva: This is an online design and visual communication platform.

Flashcards
1. Anki: This an open-source flashcards creator.
2. Flippity: This is a resource for teachers that allows for the creation of quizzes, flash cards, presentations, memory games, random name pickers, word searches, and more.
3. Memorize Now: This is a flashcards creator.
    1. Vocabulary.com: This is a vocabulary trainer and vocabulary list creator.

DIGI-LINGO on school policy[56]

School Policy as Key Element in Foreign Language Digital Education

Guidelines on digital foreign language learning and teaching and virtual pupils' exchange of course should always be part of a school's bigger ICT development plan.[57] Such a plan may impact foreign language education positively by writing out the school's vision on the **didactic use of ICT** in co-construction with the whole team of teachers and in line with the digital requirements of the government/regional authorities and/or financial support from the government/regional authorities. This entails a well-balanced strategy for mentality change amongst the team of teachers, structurally embedded professional development for all teachers, digital learning materials and infrastructure and taking **measures** to identify and deal with school specific challenges that arise from blended learning, in particular socio-economic needs of certain pupils and learning needs of vocabulary deficient pupils.
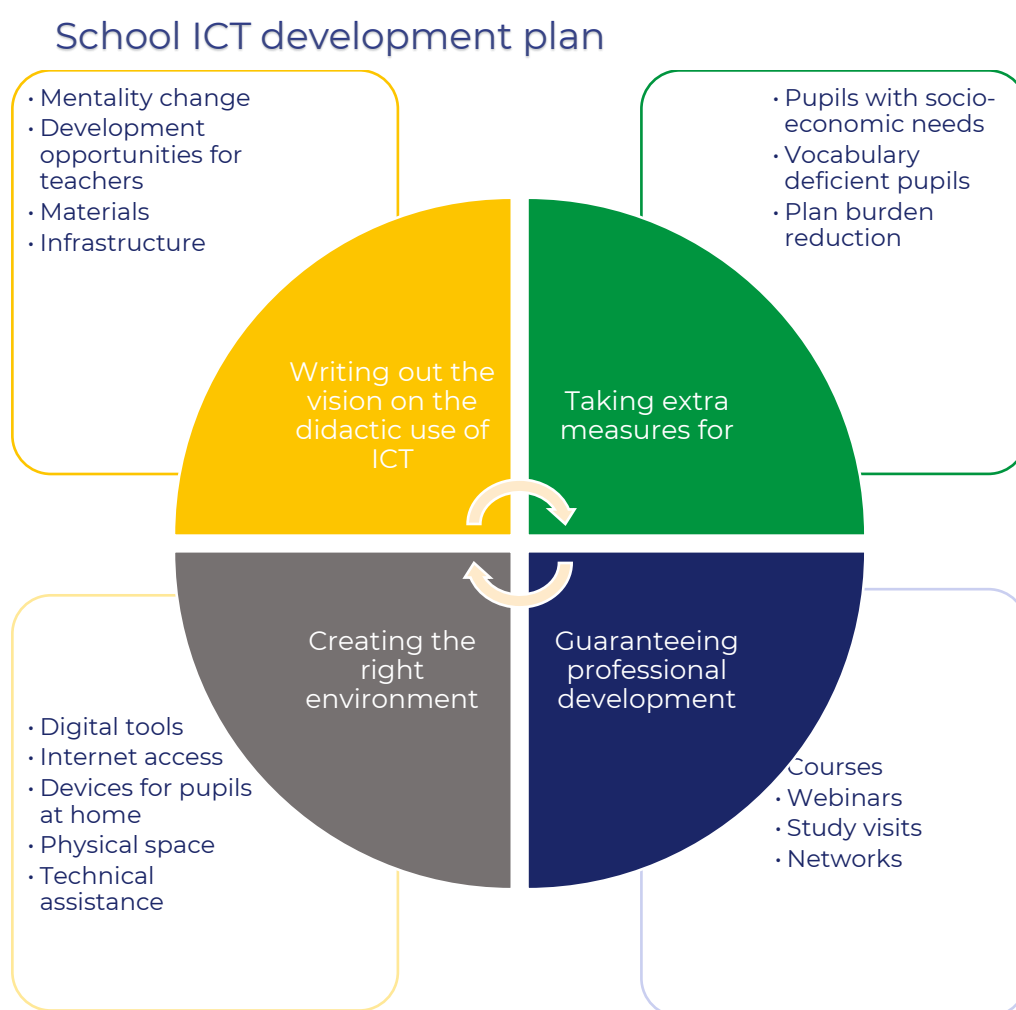
This also requires planning burden reduction for both pupils and teachers and providing an **environment** that truly supports digital foreign language teaching and learning: e.g. necessary digital tools, quality access to the internet (reliable and fast), school owned or managed digital devices for pupils to use at school and at home (the latter when applicable and when there is an opportunity), parents' participation and support with regard to the digital learning and communication environment, sufficient time for teachers to integrate ICT into the classes, sufficient physical space and just in time technical assistance for teachers in case of problems.

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[56] Image obtained from Google search: all creative commons and graphic provided by GO! in-house graphic design team.
[57] Een ICT-beleidsplan: hoe begin ik eraan? | Vlaanderen.be

Within this context schools must allocate time for **continuous professional development** both in the subject and the subject didactics, e.g. allowing teachers to participate in face-to-face and online courses and webinars on scientific insights, study visits and networks in which teaching materials and experiences are shared with other foreign language teachers from or beyond the school/country/region. Therefore it is necessary to set up a **PDCA**[58] based system to guard the internal quality and continuously improve the school's ICT development plan. Foreign language teachers in schools that do not have such a written and supported **ICT development plan** often find that the problems they encounter in their classes when using online tools and platforms for learning and assessment and carrying out virtual exchange must be tackled at the policy level.

School ICT development plan

- Mentality change
- Development opportunities for teachers
- Materials
- Infrastructure

Writing out the vision on the didactic use of ICT

- Pupils with socio-economic needs
- Vocabulary deficient pupils
- Plan burden reduction

Taking extra measures for

Creating the right environment

- Digital tools
- Internet access
- Devices for pupils at home
- Physical space
- Technical assistance

Guaranteeing professional development

- Courses
- Webinars
- Study visits
- Networks

Empowering Teachers, the importance of change management

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[58] The **Plan-Do-Check-Act (PDCA)** cycle is a systematic approach for continuous improvement whereby **Plan** means recognising an opportunity and planning a change, **Do** stands for testing the change through a small-scale study, **Check** involves reviewing the test results and identifying key learnings and **Act** requires taking action based on what one has learned. If the change didn't work, one must iterate with a different plan. If successful, one must incorporate the learnings into broader improvements. PDCA, also known as the **Deming Cycle**, ensures ongoing feedback and iterative enhancements in processes.

As previously described[59], there are several reasons why foreign language teachers today may not (yet) engage with digital platforms and tools as a means to promote 'deeper learning' among their pupils. The guidelines in this document emphasise the importance of support and professional development. Naturally, the ADKAR[60] model demonstrates that individuals must first become aware of the problem or necessary change (Awareness) and be willing to embrace it (Desire) before focusing on knowledge (Knowledge), abilities/skills (Ability), and ultimately reinforcing the change (Reinforcement). Our DIGI-LINGO reflection questions and the above chapter on school policy—specifically, the significance of vision development in collaboration with the school team—aim to address this. As a school, it is crucial to keep ADKAR in mind when encouraging foreign language teachers to adopt digital and virtual education sustainably.

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[59] In chapter 'The beginning' and the TPACK-chapter.
[60] The Prosci ADKAR® Model

DIGI-LINGO reflection[61]

Digital foreign language learning and teaching and virtual exchange amongst pupils across schools and countries is a process that needs time for execution, reflection and adjustment. The following 25 questions are based upon the content of this document and meant to stimulate the discussion amongst foreign language teachers in their own school and across schools.

On the introduction

- What digital tools make your work **easier** and help your pupils **effectively** achieve better results?
- How do you create **genuine and authentic communicative opportunities** in your foreign language class? Think of two examples of which at least one involves ICT.
- Do you think that **artificial intelligence applications** are a threat to foreign language learning? Motivate why (not).
- A number of reasons are mentioned to explain the **decline in foreign language lessons and pupils**. Do you recognize some of these in your context? Do you think there might be other reasons? If so, explain.
- A number of reasons are mentioned to **advocate studying foreign languages and its cultures**. Which are the two most important reasons according to you? And which do you think could convince your pupils? Which would be understood by management? Politicians? Motivate.
- Do you believe that learning foreign languages through **pure online courses** is better in certain contexts in higher secondary education compared to blended learning? Motivate why (not).

On the recommendations

- How do you keep up with the **amount of digital tools and platforms** that are available nowadays and the fact that tools disappear/are developed on a daily basis? How do you choose which particular tools/platforms to use? Explain.
- How many of your lessons consist of **blended learning[62]** and why is that percentage that high or that low? Explain.
- How and when do you use digital tools/platforms to **assess** your pupils? Explain.
- What (if any) **virtual exchange platform** do you use and what is the main reason and advantage according to you? Explain.

On the guidelines

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[61] Image obtained from Google search: all creative commons.
[62] By this, we don't mean that every lesson necessarily has to include some 'blended' aspect. We are talking about all lessons over a period of time.

- Is your **TPACK** okay: Are your content knowledge, pedagogical knowledge and technical knowledge in balance? Which aspects are you struggling with (if any) and why? Explain.
- How do you **select** which particular online tools and platforms to use for what part of your language course? Which are the criteria that you use? How do you keep your pupils sufficiently interested while not becoming overwhelmed as a teacher? Explain.
- Is it your perception that pupils in higher secondary education, though they are described as **digital natives**, often only know the particular tools they use? Motivate why (not).
- What is your personal aim with regard to digital foreign language education? Is it to become an ICT **pioneer** or is that a bridge too far? Perhaps you are already one? Explain.
- Have you already had or are you planning to have discussions with your pupils on the usage (possibilities and advantages, but also disadvantages and threats) of **artificial intelligence applications** for foreign language teaching and learning? Motivate why (not). But if so, what was the result of that discussion? What were the major findings?
- Do you **co-create digital evaluation rubrics** for assignments, projects, and tests with your pupils? Do you sometimes ask them afterwards whether the criteria were fair and effective? Motivate why (not).
- Do you use **digital assessment** a lot? Motivate why (not). But if so, what are the best online tools and platforms to use? Which tools and platforms support a valid, objective and transparent evaluation and generate lots of data?
- Do you use **gamification**[63] a lot in your foreign language classroom? Motivate why (not).
- How do you stimulate **self-regulation**[64] in your foreign language lessons? Explain.
- What role does **inclusive citizenship** play in your country/region? Is it explicitly integrated in the foreign language curriculum or elsewhere in the curriculum? Explain.
- What is your own **cultural and linguistic identity** and in what way does this influence the way you teach foreign languages? Explain.
- How do you try to avoid dealing with **stereotypes and prejudices** in your foreign language class? Explain.
- According to you, is there enough room in the foreign language curriculum to provide pupils with opportunities to **self-assess** their foreign language learning process and products and explore their **beliefs about themselves** as foreign language learners? Motivate why (not).
- Which of all of the recommendations do you find most difficult to put into practice, and which do you consider to be relatively simple to **implement**? Explain.
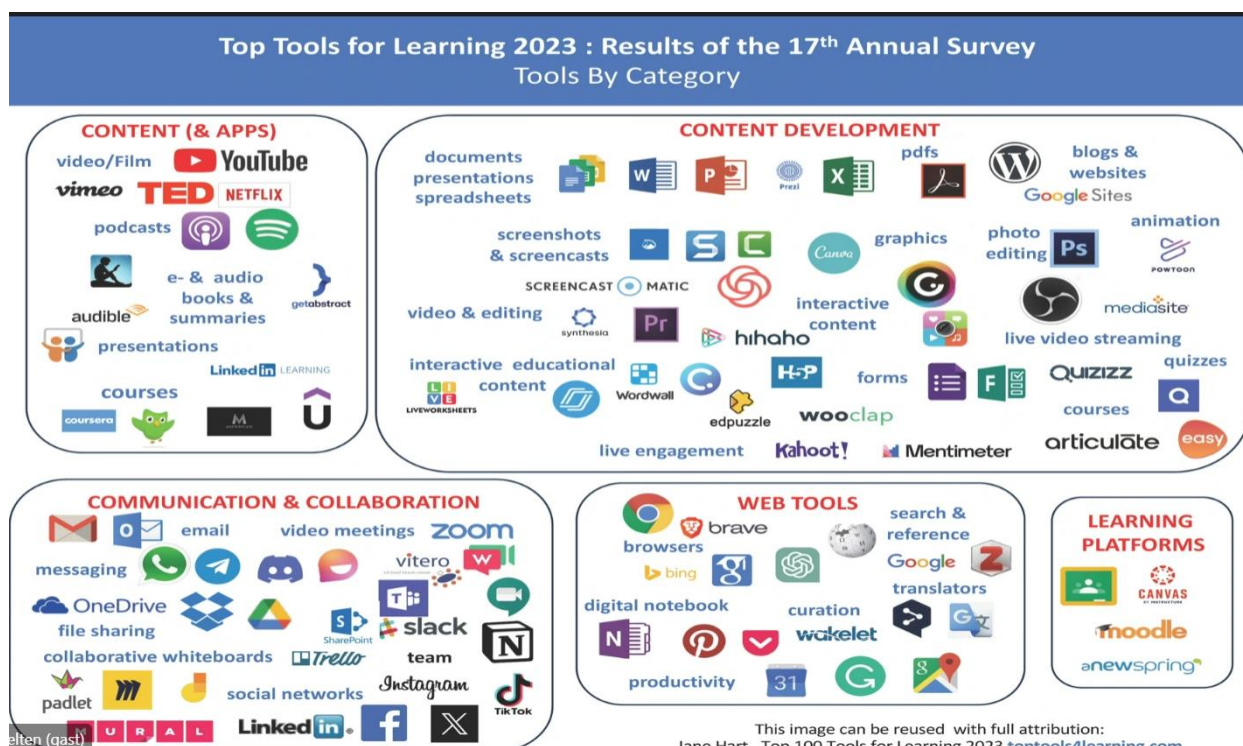
On the school policy

- What are your school's **biggest needs**? Is it that a mentality change is needed amongst the team of teachers with regard to integrating ICT in foreign language education? Plan burden reduction? The fact that professional development opportunities are scarce and not considered essential in order to be able to integrate ICT into foreign language lessons? A lack of (the right) digital learning materials for foreign language classes at school? Perhaps a lack of the necessary infrastructure, including quality access to the internet (reliable and fast)? Or does it have more to do with the pupils' home situation, such as the lack of a device, appropriate learning environment or parents' participation in the digital communication? Explain the two biggest needs and motivate.
- Pupils with learning and socio-economic needs often experience blended learning as yet another **obstacle**. Does your school have many pupils with those needs and if so, how does your school try to make sure they don't fall behind? What concrete measures are taken? Explain.

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[63] E.g. introducing games to learn or rehearse vocabulary and grammar.
[64] The way pupils plan, evaluate and adjust their actions to achieve their learning goals (cf. Barry Zimmerman).

DIGI-LINGO addendum

Top Tools for Learning 2023 : Results of the 17th Annual Survey
Tools By Category

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Jane Hart. Top 100 Tools for Learning 2023 toptools4learning.com

The proliferation of digital tools in today's world, coupled with their frequent emergence and disappearance, poses a challenge for foreign language teachers. Attempting to master all available tools is both impossible and undesirable. Instead, teachers should focus on a carefully selected set of tools that enhance their foreign language teaching.

When choosing tools, several criteria come into play. These include data gain, user-friendliness, cost, and students' appreciation. Some schools even mandate the use of specific tools due to paid subscriptions. However, there's a catch: free online tools may only remain free for a limited time. This situation may be frustrating, especially when teachers invest time in learning a tool, only to find it unavailable later.

To address this, the DIGI-LINGO steering group reviews the links to the free online tools every six months. Despite the challenges, staying informed about these tools remains crucial for effective language instruction.

DIGI-LINGO Framework of Foreign Language Teaching and Learning

While the 'four phases' are not new, the framework aims to inform and support foreign language teachers by integrating selected 'guidelines' and demonstrating how to work with them using specific digital tools.

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1. **Planning**: The planning phase of the DIGI-LINGO Framework of Foreign Language Teaching emphasises the value of digital lesson planning, especially in the context of the pandemic and the shift to learning with digital tools, including AI, for learning. Teachers should prioritise diverse learning approaches to enhance pupils' motivation.
   While personalised learning is becoming increasingly important, and pupils can and should be involved in the planning process, ultimately, the lesson remains teacher-led. The teacher needs to make sure the focus and expectations are transparent and unambiguous. In general, encouraging self-reflection as part of these assignments is equally important.

2. **Conducting**: In carrying out the lessons, collaborative learning through breakout groups (such as Teams, Meet or Zoom) or classroom groups is essential for efficient foreign language learning. Pupils learning from each other lies at the core of the DIGI-LINGO Framework of Foreign Language Teaching. Additionally, there is a shift in focusing solely on written assignments/products to (incorporating) the process of writing/creating a product and reflecting upon AI-generated products. This is in line with the vision on communicative language teaching which emphasises the need for language use and interaction/negotiation for language learning. This approach provides valuable insights into how pupils learn and understand, thus promoting deeper learning. A strong pupil-teacher relationship is crucial in this context.
   What is also important, are pupils' perspectives on language, including motivation and barriers, as well as the need for metalanguage. This involves understanding what it means to learn a language, how to approach it, why specific activities are carried out and considering the practical applications of the language you've learned, based on your current proficiency level. In many schools, pupils do not engage in this sort of conversation, which can contribute to unnecessary frustration.

3. **Assessing**: The assessment phase of the DIGI-LINGO Framework of Foreign Language Teaching underscores the value of process-oriented assessment, with "checkpoints" during lessons, offering insight into what a pupil understands and is able to reflect on. Pupils 'motivating' their handed-in foreign language product also serves as an effective way of measuring how much they have learned. On the condition, of course, that they have the language to be able to do so. For absolute beginners, e.g., this exercise may be intimidating, unless they are allowed to use the school language. As stated before, the focus and expectations needs to be crystal clear to make it easier for them to also assess their outcome. In general, encouraging self-reflection as part of these assignments is equally important.

4. **Evaluating**: The evaluation phase of the DIGI-LINGO Framework of Foreign Language Teaching and Learning highlights the need for feedback from pupils regarding successful and unsuccessful learning approaches. This feedback is essential for teachers to evolve themselves and develop improved and personalised courses. Various activities can be used to reach this goal, e.g. talking with pupils in class after an assignment/assessment procedure/use of a certain learning approach, or having them turn in anonymous feedback.

By integrating these phases into digital and virtual foreign language education, teachers can enhance the effectiveness and engagement of their pupils' learning experience. The framework explains how to work with a selected set of guidelines derived from surveys and DIGI-LINGO's pedagogical foundation.

DIGI-LINGO guidelines in relation to the literature survey and the DIGI-LINGO framework of foreign language teaching and learning[65]

Enhancing Recommendations and Guidelines
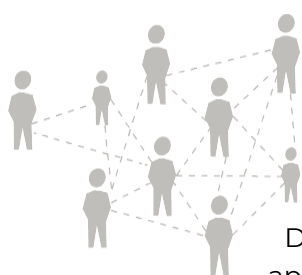
Informed by a comprehensive literary survey (see 'DIGI-LINGO Results and recommendations based on questionnaires') and insights gathered from school questionnaires, initially general and country-specific recommendations were formulated. These were then distilled into a concise overview comprising six key recommendations.

During the guideline development process, various organisational approaches were explored and, ultimately, a strategic decision was made: the guidelines were restructured to align with the six key recommendations. In doing so, however, overlaps between certain recommendations were identified as well as a few missing elements. As a result, the six recommendations were reframed into two, thus enhancing their clarity and impact.

Recommendation A ("Offer foreign language teachers professional development opportunities with regard to blended learning in general and specific online tools and platforms") corresponds with guidelines 1, 2 and 6. Recommendation B "Develop foreign language teachers' competences to work on the following items in a digital setting" corresponds with guidelines 3, 4 and 5. This optimisation ensures that the guidelines are more robust and conducive to effective implementation.
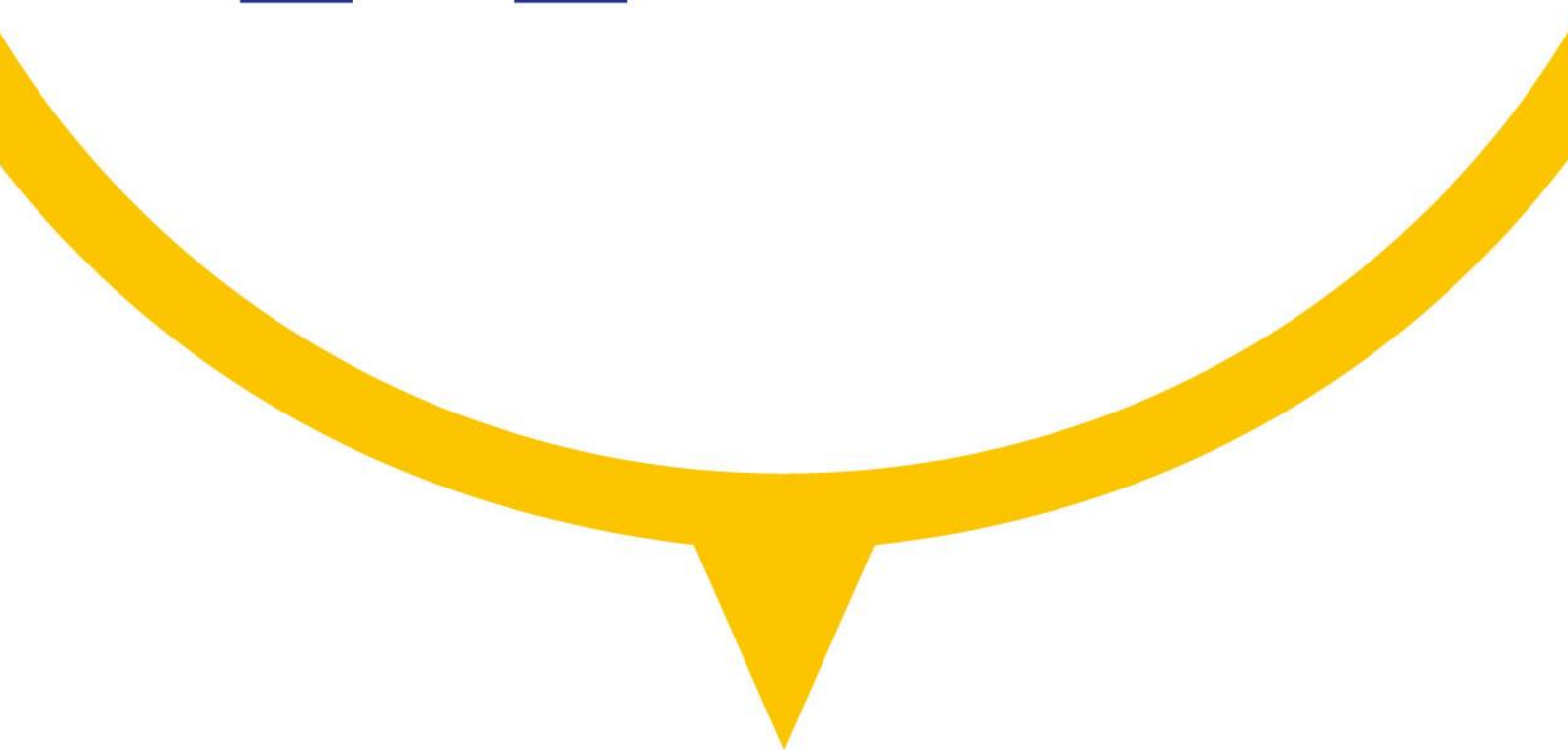
In the application project, Result 2 is titled: "**Digital Teaching Guidelines and Methods for Virtual Language Exchange**". For teachers, the 'how to' is crucial, as it gives meaning to the project. The DIGI-LINGO Method of Learning offers a comprehensive approach to foreign language education that emphasizes the importance of digital planning, collaborative learning, process-oriented and self-regulated learning, assessment with a focus on pupil-teacher relations, and continuous evaluation. There are four distinct phases, ensuring an effective and engaging learning experience for pupils.

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[65] Image provided by Central Denmark Region in-house graphic design team.
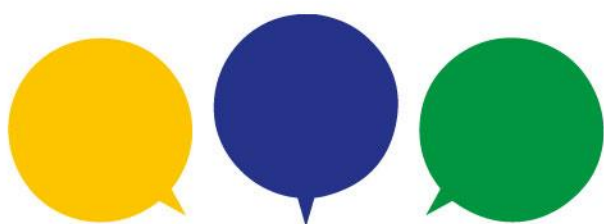
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