DELTEA: AI and Technology in Education Call for Evidence - 2026

We are researchers at the University of Southampton and Reading. We co-Lead Research in Primary Languages (www.ripl.uk), which is a network of researchers, teachers and headteachers who champion evidence-based policy and practice for foreign languages (FL) education. Our latest, UKRI funded research project, Digital Empowerment in Language Teaching (DELTEA), investigated the impact of digital tools in language teaching both for teacher professional development, teaching and children's learning outcomes. We collaborate with schools and teachers across England and national organisations such as the National Consortium for Languages Education, informing their provision at both secondary and primary phases.

Opportunities for EdTech to address languages education challenges: Languages education offers a crucial opportunity for children to develop appropriate knowledge and skills for an ever-changing world (CAR 2024). Linguistic skills and intercultural skills are believed to contribute to national income (Foreign languages: skills in the workforce - House of Lords Library) as well as the development of important social and emotional competencies such as curiosity, empathy, tolerance and cognitive creativity (Graham & Porter 2025; OECD 2024). These attributes support learning, societal cohesion and the soft skills required for international relationship building which are key drivers of the 2025 Modern Industrial Strategy. Learning a language supports this development in different ways to other subjects because its very nature involves cognitive and linguistic reorganization, associative and divergent thinking, as well as creativity (Bergs 2019).

Research tells us that **linguistic and non-linguistic outcomes are predicated** on the **right conditions: teacher pedagogic competence, linguistic confidence** and **classroom experiences** (Porter et al. 2025) and survey evidence indicates that schools experience provision challenges. These include:

-teacher pedagogic expertise. Both generalist and specialist teachers lack access to good quality professional development (Holmes & Myles 2019) and to wider communities which can support professional learning (Seymour 2018).

-good quality linguistic input. Generalist teachers can lack linguistic confidence which means learners are less likely to experience high quality language models and engaging learning activities (Holmes & Myles 2019).

-regular language learning time. Research shows that children make optimal progress when they have regular, 1 hr long, sequenced opportunities for language learning (Graham et al., Kasprowicz).

Our evidenced submission contends that **EdTech and AI** are **important** and can be harnessed and applied to address the "right conditions" and therefore **improve linguistic** and **non-linguistic outcomes**.

EdTech/AI Challenges and Opportunities

DELTEA evidence indicates that **digital** (online and asynchronous) professional development (DPD) can address teacher pedagogic efficacy and motivation in unique ways and impact both teaching and learning. Pedagogical efficacy is linked to learning outcomes and is underpinned by basic psychological (intrinsic motivation) needs of competence, autonomy, and relatedness (Deci & Ryan 2000).

DPD improves teachers' sense of value: DELTEA research exploring primary FL DPD found that a 9-month programme of only **2 hours provision per month significantly increased teachers' overall sense of competence** for teaching languages, especially for teaching FL reading comprehension, culture and creativity. It also **increased their sense of autonomy**. **Effects were most marked for non-expert, generalist teachers** who are most in need of subject-specific professional development. Qualitative findings showed teachers **valued a sense of community** and sharing and that this increased their **sense of professional value**. We argue that digital tools afforded this through the extension of interactional spaces through online communities (Minea-Pic 2020; Laurillard 2012).

DPD changes teachers' understanding and practice: Further analysis of qualitative online platform data showed that teacher engagement with evidence transformed **all teachers' understanding of new concepts** or **validated existing practice**. The knowledge, skills and resources that teachers developed and trialled during the DPD, in turn **impacted upon teaching.** The **higher teacher sense of competence** was, the **better outcomes** their learners achieved. DELTEA found that the digital format allowed teachers to engage with research findings in accessible ways and then consider, through evaluating exemplars, which changes in practice might work in their settings and why these could be successful. These affordances, fostered by longitudinal, online DPD, align with the evidence based around optimising teacher learning though vicarious experiences (Bandura 1994), shared experimentation (Beach 2017), feedback (Haukås et al. 2022) and non-hierarchical communities (Lantz-Andersson et al. 2018). It also allows for longitudinal learning opportunities, widely recognised in education research as supporting deeper learning and changes in practice (Darling-Hammond et al. 2017). Teachers' sense of **autonomy**, especially for pedagogic innovation within relative constraints improved through our DPD programme. This is particularly important since The Curriculum and Assessment Review (2025) recognises that professional autonomy empowers "teachers….[in] interpreting and transforming.." to ensure local relevance of national curricula (CAR, 2025, p.50).

DPD evidences professional development quality: DPD can also support the tracking of the effectiveness of professional development resources through monitoring **teacher engagement, learning** and **outcomes** (Darling-Hammond & Richardson, 2009). In DELTEA, digital tools with embedded analytics tracked **teacher engagement,**

conceptual learning, reflection, collaboration and **pedagogic experimentation**. Teachers particularly valued opportunities to **share** and **reflect on practice** and **research evidence**. Analytics, in turn, can feed back into DPD design to enhance **quality** and **relevance** which is crucial in supporting teacher buy in.

Edtech, AI and Impact on Teaching:

21st Century literacy is widely acknowledged as multimodal (e.g. sound, visuals, text, semiotics – Anstey & Bull, 2018). DELTEA DPD asserted that using multimodal texts in language classrooms would support not only linguistic outcomes but the development of 21st century skills: critical thinking, communication, collaboration and creativity. A growing body of research shows that multimodal input, including captioned videos supports the development of vocabulary and language comprehension (Avello 2023; Wi & Boers 2025) and offers motivating and engaging input which is more likely to be processed (Troyer et al. 2019). This is because the combined use of text, sound and images is likely to lead to greater retention (Mayers' Cognitive Theory of Multimedia Learning 2021). Richer, multimodal input is also likely to provide layers of information (clues and context) that children process alongside text (Pike et al., 2010) thereby scaffolding opportunities to engage with content just above their current linguistic level.

EdTech provides teaching quality (multimodality): DELTEA DPD involved blending research evidence, co-constructed practice and **digital literacy resources**. These multimodal digital resources provided optimal ways to **support learning**, address **provision equity** and **quality** (native or near native speaker input for non-specialist teachers) and **track children's progress** as well as **learning outcomes**. Teachers trialled co-constructed pedagogies, developed during the DPD in their classrooms. Children worked with multimodal digital stories with a combination of known and unfamiliar language, either on a whiteboard screen (whole class) or on individual devices. Teachers used **supported challenge** which involved scaffolded tasks to unlock meaning through cycles of collaborative reading and the use of knowledge sources or skills to make informed decisions about text meaning.

Edtech supports teaching quality (cognitive challenge): In addition to multimodal input, learning was also supported by the nature of tasks Edtech affords. When engaged with deeper learning, children were given opportunities to respond to complex tasks in a variety of ways: images, drawing, matching, drag and drop and audio recording. For example, they were asked to identify similarities and differences when comparing their lives with those of story characters by dragging and dropping FL words into a table. Facilitating different response types aligned with our DPD aims of building **creativity** into pedagogy.

AI supports teaching quality and access (FL phonics instruction). DELTEA teachers also experimented with a novel AI-based **phonics app** in French and Spanish. Phonics

instruction and reading aloud (phonological decoding) are core elements in FL curricula which underpins progression in language learning for both KS2 and KS3. Research has already shown that phonics can realise benefits for reading comprehension and particularly vocabulary learning (Woore 2022). However, **teaching and assessing phonological decoding can be challenging** for a range of reasons. Firstly, in KS2 primary school teachers can have limited linguistic expertise and therefore **input lacks high-quality, target-like models of pronunciation**. In whole class settings it can also be difficult to isolate and **give personalised feedback on children's attempts at reading aloud**. Finally, all teachers are likely to struggle with **scaling up assessment** due to a lack of tools to gather **reading aloud performance data** and **time to individually assess learner outputs**.

To address such challenges, DELTEA developed a **bespoke phonics app** with Niter Ltd in French and Spanish. The app aligned with earlier research by Courtney and Graham (2019) which suggested that digital resources should be game-like, offering both challenge and supportive feedback to maximise young learner progression. Seven sound/spelling links were identified in each language that offered different levels of learner challenge. In each 10-15 minute lesson learners practised discriminating and producing the actual new sound and then making links between that sound and its spelling, practising reading aloud (print to sound) and identifying letters from a sound (sound to print). The app offered **multimodal input** – written text, **high-quality audio recording exemplars of sounds** and **visual representations of pronunciation** (videos of mouths articulating words). Children were invited, where appropriate, to **reflect on articulatory properties** (how sounds are formed) and to produce target language words.

AI provides formative and summative feedback. The AI app also generated opportunities to **motivate children** and to **monitor progression and learning outcomes**. Prior to engaging with the app, the children were able to choose/adapt their own usernames and to choose an avatar from a selection. They were able to add features to their avatars as they progressed through the tasks. During each lesson, **AI provided a means of monitoring incremental progress** and gave **learners personalised, real-time feedback**. Learners were asked to record themselves reading aloud target words. The app then used AI (a multilingual speech recognition model) to generate a transcript of the actual sounds the learner had produced. The transcript was then given a confidence or probability score which reflected how confident the model was that the phoneme matched a generalised phoneme in the network. Language specific scores were then generated as the app compared the learner transcription against an exemplar generated by a native speaker (a groundtruth). Such analyses produced a numeric score for each sound in a word and then an overall, cumulative score for the whole word. The learner then received feedback, largely based on the overall word score at the sound level but also including elements of pitch, volume,

timing and length. This numeric score out of 100 then triggered appropriate narrative feedback from the app such as “well done, you’ve nailed the nasal sound!” or “that didn’t sound quite right, don’t worry, you can try again later!”.

Formative feedback was offered to each learner. At the beginning and end of each lesson, children were asked to read aloud two words. Once the lesson had ended learners were shown a screen where they could compare scores at the beginning and end and listen to changes in their recordings. This was also accompanied by narrative feedback. Throughout the lessons, learners’ scores and recordings generated “pro points” which they could redeem to customise avatars. The app also used AI to offer **summative feedback** at the beginning and end of the phonics instruction programme.

The use of AI as a pedagogic tool for language learning has been critiqued since it can offer transactional rather than rich communicative competence (Kern 2024), lack cultural sensitivity due to training models based on English (Crompton et al., 2024). DELTEA research has shown that AI can be used **to support teachers with lower levels of linguistic confidence** and **enhance teaching** through multimodal, personalised learning experiences and feedback. In turn, DELTEA EdTech and AI tools impacted upon children’s learning.

Edtech, AI and Impact on learning:

EdTech and AI improve linguistic and non-linguistic outcomes. DELTEA research in KS2 classrooms across England and Scotland found that multimodal, digital stories, combining text, sound and images with supported challenge significantly improved FL reading comprehension and vocabulary learning when compared with children receiving more conventional FL instruction.

Findings also showed that rich, digital stories with embedded tasks encouraged children to engage with cognitively demanding tasks. The multimodal input supported comprehension, freeing up learners processing capacity to think beyond the text’s words. This allowed children to take the perspectives of different characters, to reflect on wider societal issues such as poverty and to imagine potential solutions. Such tasks contained elements of **imagination, empathy, perspective-taking** and **problem-solving**, all deemed by cognitive psychologists to be exemplars of **creative thinking**. When compared against children receiving regular FL instruction, learners in DELTEA showed significant gains in creative thinking, particularly flexibility. Flexibility means being able to shift ideas, think of alternatives, and look at problems from different angles.

Qualitative data showed that DELTEA children were more likely show enhanced empathy, for example wanting to meet a child from another country and feeling that children from other cultures were similar to them.

Edtech supports inclusive learning spaces. Multimodal resources are recommended for children with specific learning difficulties such as dyslexia since they can lessen the processing burden in reading text only (Kormos and Smith 2023). The DELTEA study used mixed effects models to find that, when dealing with supported challenge, SEND and EAL children were not disadvantaged. These effects applied regardless of FSM eligibility in the school they attended, so all children were empowered regardless of background.

AI improves phonological decoding (reading aloud). AI Edtech also contributed to the learning of phonological decoding. For assessment of learner progress, the Speacher app contained pre- and post-tests at the start and end of the programme of lessons. These included uncommon and non-words in each language. Within lessons, the app allowed the tracking of changes in production of both practice exemplars and unfamiliar, low-frequency words. Initial analyses showed that the **app significantly improved reading aloud accuracy across all taught sounds** when app users were compared to children experiencing regular FL instruction including some phonics work. This is particularly noteworthy because **progress was achieved after only seven weeks of bite-sized, focused instruction**. Analysis of each target language sound demonstrated that **app learners made significant progress across every sound** (rather than high performance on specific ones) and crucially that, at the same time, their **suppression of L1 (English) sounds increased significantly**. Supplementary analyses showed that the app word level scores compared quite favourable with human auditory assessment of target-like production of sound spelling links indicating the **potential for the app to contribute to larger-scale assessment** (Turner et al., 2025).

EdTech and AI needs investment and planning. Despite the affordances that digital technology brings to language learning that benefits teachers and all learners, considerable investment is necessary to support the use of such tools in mainstream education. This is recognised by the Government's Digital Inclusion Action Plan (DfE and DSIT 2025b) and consultation exercise to investigate the Digital Divide in education. Local Authority primary schools are less likely to have a school technology strategy than their academized counterparts (DfE 2023) and wider research has identified that digital equity is a global issue (Gottschalk and Weise 2023). Nevertheless considerable work has been undertaken in England to improve the availability of technology in schools and 77% of primary schools now report that their learners can access a tablet (DfE 2023). However, it is not clear whether such access is high quality and unfettered. This is important since quality of user experience is a known factor in the effectiveness of digital tools on learning outcomes including digital skills (Loh et al. 2025) which are known to be weaker in students from less advantaged backgrounds (Scherer & Siddiq 2019). We are also mindful that teachers will benefit from DPD provision to support their understanding and adoption of digital technologies to support language learning outcomes and to foster their own sense of professional expertise and value.

To consolidate our evidence submission to the Select Committee, we submit that:

-using digital tools in primary languages should be viewed as an important opportunity to develop 21st Century skills of critical thinking, communication, collaboration and creativity. A knowledge rich and cognitively demanding learning experience with appropriate levels of support will play a crucial role in delivering on the Modern Industrial Strategy's skills pipeline.

-digital professional development that is multimodal and longitudinal supports teacher learning, teachers' sense of competence, their autonomy and fosters changes in teaching practice. This is linked to teacher wellbeing, teacher motivation and learning outcomes. Opportunities to collaborate with other teachers is valued and, in turn, contributes to teachers' own sense of being valued.

-digital tools in languages classrooms foster both linguistic and non-linguistic progress. This is linked to the multimodal opportunities for learning and inclusive teaching that digital tools offer, the facilitation of deeper, more reflective learning through supported challenge or scaffolded tasks which support strategy use, imagination, perspective-taking, cognitive and affective empathy and contemplation of societal challenges.

-AI in languages classrooms offers high-quality, engaging input that can support developing teacher linguistic expertise, offer out of classroom learning activities and provide personalised feedback to underpin progress in reading aloud.

-to maximise the potential for AI and technology to improve education outcomes essential work into provision (resourcing both hardware and infrastructure) and teacher professional development (pedagogic and technical expertise) should continue.