7 Technology in the English classroom

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Key words

CALL, MALL, SAMR

E-Learning

Mobile Learning (M-Learning)

Flipped learning/Flipped classroom

In this chapter, we ask the following questions:

What are the main principles in connection with technology use in the classroom?

What are the main drivers of technology use in Austrian classrooms?

What are the advantages and challenges of incorporating technology into the English language classroom?

What are some ways of implementing technology in the English language classroom?

Theoretical perspectives and the Austrian context

The advancement of technology and the internet has not only significantly altered people's (communicative) lives but also teachers' and learners' lives in educational settings. Electronic devices with WIFI reception have entered the classrooms with considerable impact on how teachers teach, and learners learn. However, the preponderance of tools and apps for teachers also often means that teachers have to face certain challenges and pressures that they have not been properly prepared for. In addition to incorporating technology into teaching, these include reflecting on, re-evaluating and adapting teaching styles as well as providing learning opportunities. Despite these pressures and various challenges, incorporating technology into teaching also means new fields of discovery for both teachers and learners. Yet even though teachers and learners routinely use apps for contemporary social practices, transferring them into their professional environments does not always work seamlessly (Kessler & Hubbard, 2017; Winke & Goertler, 2008). This could be seen when teachers had to move to online teaching overnight during the COVID Pandemic. Most teachers had adequate knowledge about computer-assisted language learning (CALL) principles and digital competencies/literacy (Dudeney et al., 2013). However, the abrupt move to online teaching in 2020 very clearly showed the necessity of adapting and implementing these principles in everyday teaching.

In this chapter, we will introduce some of the key terms for technology in general before focusing on the Austrian context and the drivers for technology use in Austrian classrooms. We will then highlight some advantages and challenges which occur when implementing technology and discuss some first steps towards applying tools and apps in the English language classroom.

Key terms for digital technology

The potential of technology and the computer in particular as a tool for language learning was recognised early on. In the late 1970s and early 1980s, with the introduction of computers for the masses, a discipline called CALL (computer-assisted language learning) was developed. A very broad and early definition describes CALL as "any process in which a learner uses a computer and, as a result, improves his or her language" (Beatty, 2010, p. 7). CALL covers a myriad of diverse activities and technologies, material designs, modes of instruction and pedagogical approaches such as behaviourism and constructivism. Due to the changing nature of electronic devices, CALL as a discipline had to continuously develop new approaches, or rather adapt to the introduction of new devices. In the CALL tradition, software programmes (e.g., for text manipulation), CD-ROMS and synchronous as well as asynchronous computer-mediated communication (e.g., email, chat, video- and audioconferencing) were applied to language learning.

However, as digital devices were becoming increasingly smaller and, above all, handheld, such as smartphones, tablets, and even small laptop computers, a new acronym seemed necessary and was introduced: MALL - mobile-assisted language learning. The focus shifted from transferring knowledge to supporting learners and their learning. MALL differs from CALL "in its use of personal, portable devices that enable new ways of learning, emphasizing continuity, or spontaneity of access and interaction across different contexts of use" (Kukulska-Hulme & Shield, 2008, p. 273). A number of functions and apps such as recording speech, making a video and taking pictures are now accessible to teachers and learners to support language learning with just one device.

Another key term teachers should be aware of is SAMR, which refers to a model developed in the mid-2000s for classifying and evaluating learning activities as well as encouraging and supporting teachers who apply technology in their teaching. The SAMR model consists of four classifications of technology used for learning activities: substitution, augmentation, modification and redefinition. While substitution and augmentation lead to the enhancement of tasks, modification and redefinition transform tasks by using technology. To provide a few concrete examples of

how this model could be applied in the classroom setting, we could say that substitution occurs when an essay is typed instead of written by hand; augmentation involves using word processing tools such as spell checkers; modification results in reshaping a task by, for example, embedding multimedia artefacts to complement a reflective diary on a blog; and redefinition allows for completely new tasks previously impossible such as collaborative process writing via wikis or cloud services (Dudeney et al., 2013). The SAMR model has received criticism due to its hierarchical structure, the focus on product instead of process and the absence of context (see e.g., Hamilton et al., 2016 for further details). However, it does have potential to function as a form of reflection on one's own didactic use of technology.

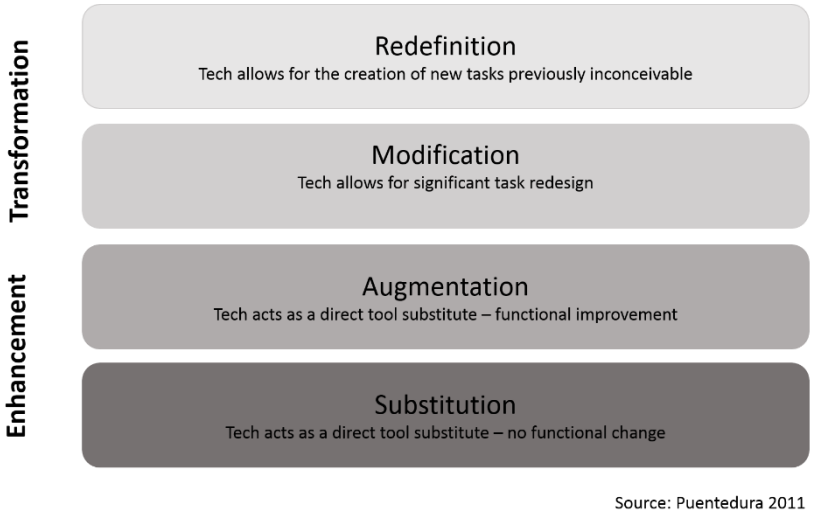

Figure 1: SAMR model

In addition to CALL, MALL and SAMR, other terms and approaches have been introduced to educational contexts. E-learning, being the broadest term, encompasses all forms of instruction delivered via computers using a variety of media. Mobile learning or m-learning can be defined similarly, the only difference being that the instruction and practice occurs on a mobile (and smaller) device. Seamless learning refers to learning anywhere, anyhow and anytime and bridges different kinds of learning such as in-school and after-school learning, formal and informal learning and learning online and offline. Learners are encouraged to use any learning resources to their advantage and to make use of their out-of-class experiences for their learning (see chapter 2 in this volume).

One final term that can be considered when talking about e-learning is the digital escape room. Multimodal literacy has become crucial for today's learning and one way learning and literacy can be incorporated into teaching is through digital escape rooms. They are virtual rooms filled with tasks (clues) which need to be solved in order to reach or unlock the final assignment. These digital escape rooms can be about a specific topic comprising a variety of language tasks with gamified elements (see Practical Applications at the end of this chapter).

Drivers for technology usage in Austrian classrooms

In the Austrian context, using technology in teaching is tied to and fostered by the digi.komp competence frameworks for pupils (https://www.digikomp.at/). These frameworks are guidelines for incorporating tools into teaching and for teaching learners digital competencies alongside the subject content. These digital competencies include the use of digital technologies for learning and the ability of performing tasks effectively in digital environments (Jones-Kavalier & Flannigan, 2008). Taking into consideration the Austrian school system, four frameworks for digital competencies were developed: digi.komp4 for primary school, digi.komp8 and digi.komp9 for lower secondary school and digi.komp12 for upper secondary school. Each of these frameworks comprises objectives learners should reach by the end of the respective grade. These frameworks are also accompanied by teaching materials for teachers to use.

In addition to these frameworks for learners, the digi.kompP framework displaying the digital competencies necessary for teachers was developed (https://www.virtuelle-ph.at/digikomp/). The curricula for primary and secondary school teachers' education at some universities and university colleges of teacher education already include digital competencies. Continuous development courses about digital competencies for teachers are also categorised according to this framework (see www.digifolio.at for further information).

There are three drivers for fostering technology in the classroom in Austria: the Austrian Ministry of Education, the National Center of Competence (NCoC) eEducation Austria and *Virtuelle PH* (The University College of Virtual Teacher Education), as well as Flipped Classroom Austria. The Austrian Ministry of Education has released several policies to enhance teaching and learning with technology over the last few years, such as Schule 4.0, digifolio.at and the introduction of *Digitale Grundbildung* (basic digital literacy) as a compulsory subject in lower secondary school. Even if *Digitale Grundbildung* is taught as a subject of its own, this does not mean that digital competencies should be ignored in the English language classroom. For

example, by incorporating various aspects into the English language classroom, digital competencies and language skills can be fostered simultaneously (Miglbauer, 2017).

Two institutions focusing on digital literacies of learners and teachers which have a considerable impact on the Austrian educational landscape are the National Center of Competence (NCoC) eEducation Austria and the *Virtuelle PH*. The former supports schools and their engagement in digital literacy. Schools can obtain badges for their digital expertise acquired in continuous professional development courses on implementing e-learning/mlearning, learning with digital media, and coding, to name a few. The *Virtuelle PH* supports teachers and university colleges of teacher education by providing online courses on digital competencies and didactic use of online tools to pre-service teachers and (university) teachers. Further, the *Virtuelle PH* supports university colleges of teacher education in implementing blended learning and online learning strategies into their teaching.

Another initiative with considerable impact on teachers and the implementation of blended learning is Flipped Classroom Austria (www.flipped-classroom-austria.at/). This initiative's goal is to make this blended learning model known and popular in Austria. Flipped Classroom uses out-of-classroom time for content transmission (usually via multimodal media) and classroom time for practice, questions and guidance of learners (see Bergmann & Sams, 2012 for further details) and can be used in English language classrooms (see Practical Applications at the end of this chapter).

Advantages and challenges of using technology for and in the EFL classroom

There are a number of advantages and challenges teachers may encounter when using technology in their teaching. As diverse as teachers are, so are the advantages and challenges of using technology. In this section, we would like to mention a few advantages and challenges that we have encountered in our own professional lives.

One of the main advantages of using technological tools in the classroom is the aspect of sustainability in both teaching and learning. For example, using technology for lesson planning and creating interactive worksheets means that materials are only a few mouse clicks away whenever they are needed. Further, less or no time is needed for copying materials. This is even more the case if the worksheets, for example, are interactive and can be worked on either via an app or the learning management platform that is used.

Another advantage is that learners' autonomy is enhanced by providing materials online. Such materials can either be prepared beforehand or produced during the lesson. For example, during a brainstorming session, an audience response system, such as Socrative, Mentimeter or AnswerGarden, could be used for collecting learners' contributions, and these could then be made available in electronic form to learners. Generally, giving learners the opportunity to take more control of their learning has a positive impact on the teacher's role in the classroom by putting a stronger focus on supporting learners rather than merely providing knowledge to learners.

For learners, the aforementioned higher degree of autonomous learning can be regarded as advantageous. Doing tasks on their electronic devices enables learners to do them at their own pace and they are time- and location-independent. Learners in secondary schools particularly use various apps primarily for entertainment and communication. Yet, learners still need to be made aware of how smartphones can be used as a tool for their language learning. By using smartphones, for example, to watch video clips, listen to music and play games, learners are already involved in informal learning mostly without them being aware of it. Using technology for learning, such as gamified tasks (e.g., platforms such as learningapps.org, h5p.org, Digital Escape Rooms, etc.) can also be fun and another motivator for learning English. Learning with technological tools in the classroom also facilitates immediate feedback on learners' learning progress since they learn about the correctness of their answers instantly.

One final advantage of using technology in and outside of the classroom is the opportunity it offers to work on transversal skills, which are skills not tied to a particular subject. For example, let us consider the transversal skill of digital literacy. Engaging with learners' (online) communicative practices in English can be beneficial in two ways: 1) complementing what is learned in the classroom; 2) making what happens in the classroom more relevant and resemble the 'real world' for learners.

However, there are also a number of challenges involved in implementing technology in the classroom. Firstly, testing tools in real-life classroom situations before using them in the classroom is often not possible. In fact, testing and using a tool usually occurs live in the session, thus putting additional pressure on teachers. Additionally, teachers may be insecure about using tools in the classroom since tool developers tend to highlight the attractiveness of tools rather than their educational purpose. Moreover, time or the lack of time is an issue, the more so if the WIFI is unreliable, which means that starting a quiz or app may become a time-consuming

process. Finally, learners' diverse range of electronic devices may also pose unforeseen problems.

Being open to and feeling confident about implementing tools didactically means that instruction and support is needed. However, official IT- and didactic support is often not provided to teachers by their educational institution. This means that teachers are left to acquire (didactic) knowledge of tools on their own, which may be yet another hurdle to using tools in their language classrooms.

Ways of implementing technology in the EFL classroom

In this section, we would like to briefly introduce three ways of implementing technology in the EFL classroom by focusing on merging technology use with language skills. These include fostering collaborative writing, providing and receiving feedback and practising and revising grammar and vocabulary.

Collaboration

Collaborating is a crucial global skill (see chapter 12 in this volume) which enables learners to practise working together. Giving learners control over the writing process and the end product ties in with learner autonomy and collaborative learning. Even though writing is usually perceived as individual work, acquiring writing skills does not necessarily need to be a solitary learning process. Learning from each other, supporting each other, discussing what to write and how to express ideas benefits learners during the writing process and consequently their individual work.

Using tools that support collaborative writing makes the writing process transparent as all learners and the teacher have access to the text during the writing process. One such tool is https://etherpad.net/, which is an open source online editor which facilitates collaborative writing and editing in real time. For collaborative learning, learners share a pad, each one of them is allocated a colour in which their writing is presented and they can write and edit using their own electronic devices. One of the benefits of this approach is that learners do not necessarily need to sit next to each other during the writing process since a chat function is also available. In addition, the teacher has access to all pads and can see each learner's contribution and, more interestingly, even how the writing develops.

Another way of collaborating in the English language classroom is when preparing presentations and negotiating how to visualise the contents. In addition to PowerPoint, there are tools such as Sway, Prezi, or even infographic open source programmes that can be used.

Collaborating online can also take place in the form of videos. An example of an online video response platform is Flipgrid (flipgrid.com). The platform enables teachers to set tasks for their learners (written instructions, video clips, pictures, etc.), who record their responses in the form of short video clips. They can learn through video clips (the teacher's and their classmates' video clips); they voice their opinion and provide feedback to each other. In this way, language skills and digital competencies are merged, and learning does not only happen inside but also outside the classroom.

Giving and receiving feedback

Giving and receiving feedback is another area where digital tools can help both the teacher and learners. Feedback tools can be used for brainstorming ideas, asking for opinions and providing feedback individually. Such tools are, for example, Mentimeter, Tricider and Answergarden. These tools also support learners who are not as confident in speaking out because it is possible to collect opinions anonymously. Using such tools is highly efficient since learners write their answers simultaneously and the teacher does not need to collect them by writing them on the board. Additionally, the results can be saved and used at a later stage, for example, for when teachers return to them and show their learners how much better they have become.

Some other examples of feedback tools are audience response systems such as Kahoot, Quizizz, and Socrative. Feedback tools and audience response systems provide immediate feedback on learners' performance and opinions. Learners can also create quizzes for each other, which fosters collaborative work and taking control of their learning.

Practising and revising

Practising and revising (e.g., grammar, vocabulary) are essential parts of language learning. A multitude of online tools and websites can support this process. Websites and apps such as learningapps.org or Quizlet allow teachers to create their own learning sets but also provide a wide variety of learning materials that can be adapted or used immediately. The advantages of practising grammar and vocabulary with such tools are location-independence (m-learning), enhancing students'

motivation through instant rewards and the immediate feedback on learners' performance.

Practical Applications

Example 1

Goals: learners will be prepared for the next lessons by introducing new content (e.g., new grammar structures, intercultural topics, etc.) via video; learners will learn to listen for detail; learners' independent learning will be increased

Activity: learning with the flipped classroom approach

Rationale: A considerable amount of classroom time is spent on introducing new content. Some learners may not need a lot of explanation or repetition of the newly introduced topics, while others may need more time for coming to terms with the new topics/skills. The flipped classroom method allows teachers to prepare their learners for the next lesson by providing content beforehand and to use the time in class for practising or discussing the topic(s). Self-paced learning is promoted as learners who need more time, explanation or repetition have the opportunity to watch the video several times and stop whenever they want. Direct instruction is delivered to learners outside class.

Pre-knowledge: general technical knowledge; general knowledge of the topic-related vocabulary.

Level: CEFR A1+ and above

Procedure

1. The students receive an instructional video (e.g., a self-made video, a screencast, a video from one of the popular video platforms, etc.) or another digital learning object which covers the content of the next lesson. As part of their homework, learners prepare for the next lesson (e.g., by watching the video clip, looking for further information if necessary, collecting questions) and come to class well prepared.

2. As the teacher does not need to spend time on direct instruction in class because learners come to class individually prepared, class time can be used for discussion, further practice, group work or individual support. Often teachers check learners' knowledge (e.g., through audience response systems) to get a general impression

of their learners' understanding and to prepare the next steps of teaching and practice.

3. Furthermore, the teacher can take the flipped class to the next level – e.g., deeper learning strategies, like inquiry-based learning or project-based learning. By way of examples, learners can create their own (instructional) videos or concentrate on working more intensively on a specific topic. This additional step can encourage learners to immerse themselves more deeply into their own learning process. Working with different forms of media, using one's own creativity, focussing on individual topics of interest and skills can lead to learners working on their own projects in a more motivated way and taking on responsibility for their own learning.

Example 2

Goal: various skills will be combined and practiced (depending on the skills included in the digital escape room); learners will be prepared to work in teams or improve their ability to work in a team; learners will solve tasks and mysteries in order to get the key for the next assignment; learners' deductive reasoning will be improved

Activity: Digital Escape Room (also known as "Edu Breakout") created with OneNote App

Rationale: Escape Rooms have made their way from recreational entertainment into the classroom. In order to get passwords or clues, the learners need to solve mysteries or brain teasers together in small groups. These riddles work with nearly every content area, particular skill or objective that has to be taught and are an enormously engaging method of introducing learners to new content and/or practising acquired structures. Furthermore, analogous and digital educational materials can be combined, language skills and digital competencies can be merged, students' collaboration competencies are promoted and deductive reasoning and logical thinking are practised.

Pre-knowledge and required materials: general technical knowledge (working with a digital notebook, e.g., OneNote), general knowledge of the vocabulary area, one laptop per team (if played in teams) or per player (if played individually)

Level: CEFR A2

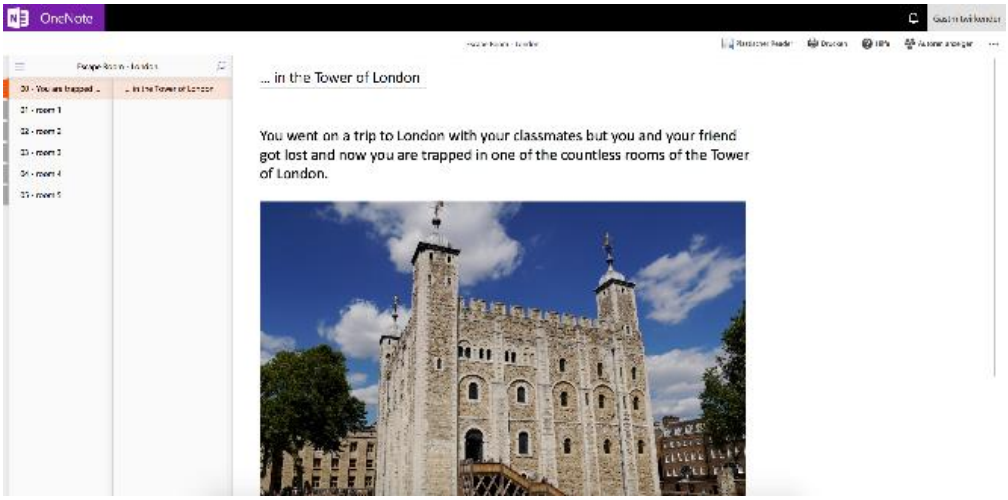

Figure 2: Digital Escape Room London (screenshot)

Procedure

1. The teacher prepares several analogous and/or digital mysteries and tasks that need to be solved (e.g., using platforms such as learningapps.org, h5p.org, Office Forms, etc.). After solving the task, learners receive a password for 'opening' the next room (e.g., the password is a combination of letters, the solution of one of the mysteries, etc.).

2. As a next step the teacher creates a OneNote notebook in which the elaborated mysteries and tasks are integrated into separate OneNote sections. For each mystery, a OneNote section of its own is required.

3. Every section needs to be provided with a password. The password for the next room is always the solution of the mystery solved before. Information or instructions on how to find the solution needs to be given (e.g., the mystery is a crossword puzzle and the password for the next room is a combination of all first letters of the answers).

4. For using the Digital Escape Room in the classroom, the teacher shares the link to the OneNote notebook with learners via email or QR code. Learners start working on solving the mysteries and brain teasers in groups or individually. Working on the tasks can be even more engaging and challenging if a time limit is set (e.g., 60 minutes). Within these 60 minutes all rooms need to be unlocked by learners in order to escape the room.

5. Finally the mysteries and tasks and the process of solving them can be reflected on and discussed in class. The following Digital Escape Room (topic: London) gives a short insight into how this idea could be implemented in class: https://kurzelinks.de/escaperoomlondon.

Figure 3: QR code

Activities and questions for reflection

1. Look at a recent lesson plan and check to what extent digital competencies (as listed in digi.komp4, digi.komp8 or digi.komp12) are taught in an integrated fashion.

2. Design your own lesson plan in which you integrate one to two digital tools. Consider the didactic scenario and how the tools enhance or transform the tasks (see SAMR model).

3. Implementing tools didactically in their teaching may be particularly challenging for novice teachers. What steps could support novice teachers?

4. How can digital competencies be integrated into online English lessons (distance / hybrid learning)? Think of various ways and benefits of merging digital competencies and language skills efficiently.

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Suggestions for further reading

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This book is a practical guide for using technology in the English classroom by providing a variety of web tools, applications and activities for the class.

Hockly, N. (2016). *Focus on Learning Technology*. Oxford University Press.

This book gives a theoretical introduction to technology in language learning and provides an overview of current theories and research on the impact of technology for young and adult learners.

Hockly, N., & Dudeney, G. (2014). *Going Mobile: Teaching with hand-held devices*. Delta Publishing.

This book explains and provides activities on how to use mobile devices in the English language classroom.

Bergmann, J., & Sams, A. (2015). *Flipped learning for English instruction*. International Society for Technology in Education.

This book is a practical guide for teachers who want to flip their English classroom. It shows practical ways of how to integrate flipped learning into the English classroom such as teaching writing, reading, grammar and vocabulary by using the flipped classroom method.

Commentary on reflection questions

1. and 2. Your answers to these reflection questions will depend on your personal teaching experience and context. The point of these questions is to encourage reflection on using digital tools in your language classroom.

3. Possible steps to support novice teachers are: looking for a mentor; finding colleagues for sharing and asking questions; joining a professional learning network (e.g., on Twitter #twitterlehrerzimmer, #educhat, following teachers); taking a didactic scenario and thinking about which tool(s) could foster the learning process of learners; choosing three tools that they want to try out and feel comfortable using and continue using as it is not necessary to use a wide range of tools

4. Some ways of integrating digital competencies into online English lessons include:

Speaking: communicating via social media, presenting your online persona, creating video clips like a YouTube vlogger, uploading these video clips and presentations (slideshare, YouTube)

Writing and reading: writing / reading a blog post, creating / reading a website

Listening: watching video clips, listening to podcasts

Some benefits of merging digital competencies and language skills are that learners focus on creating something, thus, practising language skills happens incidentally; learners practise communication as it would happen in the real world; learners use genres they are familiar with in their L1.