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Smartphones, YouTube, Kahoot! and Co.: Austrian teachers' use of digital devices and tools in the EFL classroom

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List of abbreviations

AHS	Allgemeinbildende Höhere Schule
BHS	Berufsbildende Höhere Schule
CALL	Computer-Assisted Language Learning
CBT	Computer-Based Teaching
CMC	Computer-Mediated Communication
DaF	Deutsch als Fremdsprache
EFL	English as a Foreign Language
ELT	English Language Teaching
HAK	Handelsakademie
HTL	Höhere Technische Lehranstalt
ICT	Information and Communication Technologies
IKT	Informations- und Kommunikationstechnologie
LMS	Learning Management System
MALL	Mobile-Assisted Language Learning
PC	Personal computer
RQ	Research question
T	Teacher
WBT	Web-Based Teaching
WWW	World Wide Web

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1. Introduction

Digital media increasingly play a role in our everyday lives (Schaumburg 2015: 4), and especially in the world of children and young people who grow up with them (Ebel & Zorn 2015: 2). Formal education is intended to support young people in their relationship to the world (BMBF 2014: 1). By implementing media and digital devices in the classroom, a connection to the pupils' daily life can be established (BMBWF 2024a; BMBWF 2024b). The fact that digital media should be included in the classroom becomes clear when looking at the different Austrian curricula. While the curriculum of the *HAK*, for instance, states that information and communication technologies should be used in all subjects (BMBWF 2014: 6) that of the *AHS* and of the *Mittelschule* mention digitally assisted teaching and stipulate that teachers employ learning management systems and learning platforms (BMBWF 2024a; BMBWF 2024b). With regard to foreign language teaching in particular, including ELT which is at the center of this thesis, it is pointed out that information and communication technologies are to be integrated in the classroom in a variety of ways (BMBWF 2024a). However, especially future and novice English teachers and those who are not that familiar with digital media ask themselves how they can meet these requirements imposed by the Austrian curricula. Questions such as which technologies to use, in which way and for what purpose, how to select appropriate tools and introduce them to the learners as well as which challenges their implementation could pose, arise. In light of this, this Master's thesis aims to take a closer look at the use of digital media – or more precisely of digital devices and tools – in the Austrian EFL classroom and to explore the practices, beliefs and experiences of in-service English teachers who employ computers, smartboards, apps, platforms and co. in their lessons. The following six research questions have been formulated and have guided the research project:

1. Which digital devices and tools do Austrian teachers use in their EFL classrooms?
2. For what purposes do Austrian teachers employ digital devices and tools in their EFL classrooms?
3. Based on which criteria do Austrian EFL teachers select digital tools for their teaching?
4. How do Austrian EFL teachers introduce their English students to the digital tools they should use?
5. Which benefits do digital devices and tools offer according to Austrian EFL teachers?
6. Which challenges have Austrian EFL teachers already faced when integrating digital devices and tools in their EFL classrooms? How can/could they be overcome?

To be able to answer these six research questions, semi-structured interviews with ten Austrian EFL teachers were conducted. These two-person conversations were recorded with the interviewees' consent and subsequently transcribed and analyzed following Mayring (2015, 2022a, 2022b). Lastly, the results were discussed and compared to the findings of previous national and international studies and information given in the literature.

The Master's thesis at hand starts with a literature review representing the first of two core parts and providing the theoretical framework for the study as well as some background information. It is divided into two chapters. The first one introduces the terms *digital media*, *digital devices* and *digital tools* (2.1.), provides an overview of different approaches to (language) teaching and learning including computers, software and the like (2.2.) and then illustrates the way and the extent to which digital devices and tools are mentioned in the Austrian curricula (2.3.). The second chapter elaborates on different digital devices and tools and some ideas on how they could be used in the (language) classroom (3.1. + 3.2.), outlines the findings of previous international and national studies regarding the practices, beliefs and experiences of English teachers related to digital devices and tools (3.3.) and presents various evaluation and selection criteria (3.4.). The second core part of this Master's thesis focuses on the study conducted and its results. It is composed of two chapters, as well. Before presenting and discussing the findings (5.1. + 5.2.) in chapter five, chapter four provides information on the research interest, questions and design (4.1.), the data collection method (4.2.), the interview guide (4.3.), the participants and procedure of gathering data (4.4.) and the data analysis (4.5.). Finally, the main findings are summarized and some limitations of the study as well as ideas for future research are addressed in the conclusion (6.).

2. Digital devices and tools and language teaching and learning

The first chapter of the literature review starts with an introduction of three terms, namely *digital media*, *digital devices* and *digital tools*, which are all essential for and will recur several times throughout this thesis. Subsequently, diverse approaches to (language) teaching and learning that feature the use of digital devices and tools are outlined. These range from *CALL* and *MALL* to *e-learning*, *blended learning* and *flipped classroom*. Finally, this first chapter takes a closer look at three Austrian curricula and examines how and to which extent digital devices and tools are mentioned.

2.1. Digital media, devices and tools

Digital media have become a part of human everyday life since the end of the 20th century (BMBWF 2020: 5). They transform the way people live, work, communicate and learn (Heusinger 2020: 11). These days children and teenagers are in touch with digital media from the day they are born (Ebel & Zorn 2015: 2) and they and the teachers bring the experiences they have collected as well as their practices regarding media into school. Schools have the responsibility to equip students with the skills necessary for the competent use of digital media (Schaumburg 2015: 4). But what are digital media?

Digital media refers to media of communication and information which are based on digital transmission of signals (Hellriegel 2022: 32). In contrast to analog media, such as letters, photographs, and print media like books and newspapers (BMBWF 2020: 5), digital media use a binary system for data generation, processing and storage (Falk 2019: 12-13) and allow for easy distribution of information (Petko 2020: 17). Digital media have been called *new media* (Hellriegel 2022: 32; Breitschwerdt, Thees & Egetenmeyer 2022) and are also termed *Information and Communication Technologies*, abbreviated *ICT* (Petko 2014: 16). Today *media* mostly refers to digital media as well (BMBWF 2024c). Digital media encompass, for instance, the Internet, eBooks, computers, laptops (BMBWF 2020: 5), notebooks, projectors, cell phones (Petko 2014: 13) or smartphones, tablets (Herzig 2017: 31), social networks, forums, word processing, presentation and image editing programs (Herzig 2017: 33), online newspapers, video and audio (Petko 2014: 13).

Returning to the school context, Petko (2020: 133-135) enumerates a variety of digital media useful for the foreign language classroom including, amongst others, digital dictionaries, vocabulary trainers, learning software, email, translation software, audio and video chats and mobile technologies like tablets or smartphones. Digital media offer potential for learning and teaching. They provide learners with the possibility of rapidly accessing work materials from

any place and at any time. In addition, they can give students feedback on their learning and enable them to communicate and get in contact with others as well as to work together on tasks. Analog media like schoolbooks can be enriched by, for example, video clips (Herzig 2017: 34-35). However, digital media can also lead to pupils reproducing information from the Internet, no longer concentrating on the subject-specific content and the development of their basic language skills being compromised (Ebel & Zorn 2015: 2). Lastly, Heusinger (2020: 11-12) emphasizes that teachers should not simply digitize analog methods in their lessons and integrate digital media in order to have used them. In fact, it is about exploiting the potential of digital media, further developing the learning culture and promoting learning processes in a meaningful way by employing this type of media, which requires the creation of didactic concepts (Heusinger 2020: 11-12).

As digital media can refer to a wide variety of things (Petko 2014: 13), it was decided for the sake of clarity to use the terms *digital devices* and *digital tools*, representing digital media, and to place the focus on them in this Master's thesis and especially in the interviews conducted to collect data for answering the six research questions formulated. Digital devices are defined as electronic devices that “can receive, store, process or send digital information” (UNICEF Albania 2020: 2). Some examples of this type of devices are PCs, laptops, tablets, interactive whiteboards, projectors, TVs, mobile phones (Redecker 2017: 88) or smartphones (UNICEF Albania 2020: 2) and digital cameras (Moser 2013: 22). In contrast, digital tools can be described as platforms, programs, software, applications and resources, being either online or offline, that are usable on digital devices such as computers or mobile devices and assist people in completing tasks (Moorhouse & Yan 2023). Throughout the last years, this type of tool, which was originally designed for commercial purposes, has established itself as a feature in the English language teaching classroom. Be it word-processing or presentation software, teachers utilize digital tools to support their instruction and to produce or adapt materials for their learners (Moorhouse & Yan 2023).

2.2. Approaches to (language) teaching and learning with digital devices and tools

2.2.1. Computer-assisted language learning (CALL)

Computer-assisted language learning, abbreviated *CALL*, is defined as “the search for and study of applications of the computer in language teaching and learning” (Levy 1997: 1). Besides desktop and laptop computers, CALL also encompasses e-book readers, tablets, MP3 players (Stockwell 2022: 24), electronic whiteboards and cell phones (Al-Kadi 2018: 4-5) or

smartphones (Gitsaki 2012: 106). It is due to the technological developments of the past decades and the people's attempt to utilize them for language learning that CALL exists (Heim & Ritter 2012: 13). The term *CALL* appeared in the 1960s (Falk 2019: 21) and has gone through different phases that are connected to the development of technology (hardware and software) as well as to the progress in education and linguistics (Heim & Ritter 2012: 13). During the first phase of CALL, *behaviouristic CALL* (Richards 2015: 640), beginning with what Heim and Ritter (2012: 14) call the "microcomputer revolution" (Heim & Ritter 2012: 14) and ending in the late 1980s, the computer acted as a tutor (Richards 2015: 640) that provided students with recurring language drills (Dina & Ciornei 2013: 249) targeting vocabulary and grammar (Davies, Otto & Rüschoff 2013: 19). In the second phase of CALL, *communicative CALL*, the teaching approach centered communication (Dina & Ciornei 2013: 250). During this period starting in the early 1990s, computers were on the one hand still employed for practicing skills, this time in a non-drill format and including writing, reading and discussion skills more frequently, and on the other hand, increasingly as learning tools (Richards 2015: 640-641). Learners could use the functions offered by software and thus edit texts or search databases (Heim & Ritter 2012: 15). In the 1990s, computers became multimedia and the WWW spread rapidly (Heim & Ritter 2012: 15). The use of the internet allows for focusing more on the interaction among learners in the form of *CMC* (Falk 2019: 22), *computer-mediated communication* (Hsu, Wang & Comac 2008: 182), during the third phase of CALL being *integrative* or *integrated CALL* (Falk 2019: 22) which began in the late 1990s (Richards 2015: 641). This era is characterized by the different language skills being incorporated into one website or program (Richards 2015: 641) and the emphasis of CALL moving towards systems that are adaptive, game-based, interactive, intelligent, problem-solving and learner-centered and that permit communication in both asynchronous and synchronous modes (Falk 2019: 22).

Generally, computers have been employed to engage and motivate students and to teach reading, writing, listening, vocabulary, grammar and pronunciation as well as for language assessment (Gitsaki 2012: 106). Regarding reading, CALL technologies such as electronic dictionaries can be employed (Levy 2009: 772). Furthermore, CALL allows learners to access authentic materials via the Internet that feature multimedia annotations (audio and visual input, hyperlinked glosses) and writing tools (word processors) as well as social networking software (wikis, blogs) through which they can practice writing skills (Gitsaki 2012: 106). Speaking skills can be fostered by synchronous video or audio conferencing with native speakers or other learners and applications supplying instructions and offering graphic annotation provide opportunities to train accent, intonation and pronunciation (Gitsaki 2012: 106-107). Moreover,

podcasts and other audio resources permit learners to practice listening and become familiar with the varieties of English spoken across the world. While grammar can be improved by completing drill-based exercises that give immediate feedback, vocabulary may be learned via software or reading texts containing glosses (Gitsaki 2012: 107).

However, Kern (2006: 200) points out that it is the specific **use** of technology that impacts language learning and not the technology itself. Thus, the teacher as well as pedagogy are of vital importance (Kern 2006: 200). Son (2002) also regards the teacher, aside from the learner and the computer, as a core component of the CALL classroom. The educator has to know the new technology and the teaching methods making use of CALL tools, act as, amongst others, CALL implementer, designer or evaluator (Son 2002) and prepare students for language exercises comprising authentic web resources and assist them while they are working through their tasks (Gitsaki 2012: 107).

2.2.2. Mobile-assisted language learning (MALL)

Mobile-assisted language learning (MALL) has come into being with the emergence of computerized handheld devices (Burston 2013: 157) and builds upon the concept of *m-learning* or *mobile learning* (Falk 2019: 22) described as learning and teaching with mobile technologies (Duman, Orhon & Gedik 2015: 198). It is about the learning of a language, either a second or a foreign one, by using one or several mobile devices as well as about their application in the classroom (Stockwell 2022: 8). Some devices employed in MALL constitute MP3/MP4 players, cell phones (Kukulska-Hulme & Shield 2008: 273) or smartphones and tablets (Duman, Orhon & Gedik 2015: 198). The objectives of MALL are moving learning from the classroom to the out-of-school world, enriching activities in the lesson and improving writing, speaking, listening, vocabulary, fluency, grammar and pronunciation by using technologies (Stockwell 2022: 9-12). The students can employ mobile devices with which the teacher equips them or which they possess to complete learning activities (Stockwell 2022: 8). These devices and, for example, videos and audios may be integrated into teaching in combination with non-technological tools like the textbook and paper-based materials in general (Stockwell 2022: 10). Mobile-assisted language learning encompasses tasks including the search for information via a search engine or online dictionary, the use of a vocabulary app and the recording of videos (Stockwell 2022: 11). Besides this, access to a wealth of multimodal learning materials, instant and customized feedback and social communities is made possible through mobile devices (Stockwell 2022: 12).

Arvanitis and Krystalli (2021: 15) indicate that MALL provides students with the

possibility to organize their learning, including time and space and the way they use learning materials and information provided online, themselves. The application of mobile devices in the foreign language classroom and learning results in an increase of their learning motivation (Arvanitis & Krystalli 2021: 15). Nevertheless, one concern regarding mobile devices is that learners may be distracted by notifications or information appearing on the display. This could lead to them interrupting or terminating their work on the devices or their concentration being disturbed (Stockwell 2022: 128).

2.2.3. E-learning, blended learning and flipped classroom

E-learning or *electronic learning* (Arnold et al. 2018: 22), which is also understood as *online learning* (Davies, Otto & Rüschhoff 2013: 31), describes teaching and learning with digital media (Strasser 2011: 11). The term *e-learning* has in the last decades replaced all other terms employed when talking about the use of computers for learning purposes, such as *multimedia learning* (Arnold et al. 2018: 22). Moreover, in the context of the development of e-learning, *Computer Based Training* (CBT) and *Web Based Training* (WBT) have emerged at first (Arnold et al. 2018: 22). These two terms which are difficult to separate (Kerres 2001: 14) can generally be found in adult education (Nieweler et al. 2006: 165). Computer Based Training refers to the diverse forms in which a computer is employed for learning (Kerres 2001: 14). The computer, or software, is a tutor and displays information, assigns tasks, gives feedback and determines the next step in learning (Nieweler et al. 2006: 165). Web Based Training, in contrast, describes the use of the World Wide Web as well as web technologies like email for didactic purposes (Kerres 2001: 14). It represents a specific form of Computer Based Training that includes the provision of information and exercises over the Internet or an organization's Intranet (Nieweler et al. 2006: 165).

E-learning, which often takes place employing Learning Management Systems (Strasser 2011: 11), offers learners many benefits such as the flexible organization of their learning comprising a free choice of place, time, duration (Strasser 2011: 16), pace and style of learning (Erpenbeck, Sauter S. & Sauter W. 2015: 1) and the feeling of autonomy and self-efficacy that can result in the increase of their motivation (Arnold et al. 2018: 22). Downsides to e-learning, however, can be the adversely affected interpersonal communication and the restriction to the reading and writing of texts (Strasser 2011: 17).

E-learning can also be mixed with face-to-face learning, referred to as *blended learning* or *integrated learning* (Haufe Online Redaktion 2020). According to Moorhouse and Yan (2023), blended learning constitutes, besides game-based learning and flipped classrooms, a

pedagogical model for using technology in teaching that has been conceptualized alongside the emergence of digital tools designed for education. In blended learning scenarios, learning takes place partly on-site as well as partly outside the classroom (Petko 2014: 100). In addition, face-to-face learning phases typically alternate with online learning phases (Petko 2014: 100). There are three different variants of blended learning according to Petko, Uhlemann and Büeler (2009). In the first one, activities offered online, like online tests, complement or deepen classroom teaching. Face-to-face instruction, however, does not have to be related to what is provided as a task online. Regarding the second variant of blended learning, one can say that learning online serves as the preparation for or as a follow-up to the in-class teaching and what is or was done in-person is linked to what had to or should be completed online. The third variant of blended learning refers to e-learning that accompanies learning activities (e.g. electronic learning diary, wikis for projects). Learners work on the same tasks on- and offline (Petko, Uhlemann & Büeler 2009: 189-190).

The benefits of blended learning scenarios are numerous. First of all, as King (2016: 2) states, the classroom and online environment can be used for what they do best, namely, in reference to the first, for the introduction to new topics, meaningful communicative tasks or the explanation of language points, and regarding the latter, for the practice and consolidation of the subject matter or the preparation for the topic that is going to be discussed next (King 2016: 2). Self-directed learning is encouraged as the students decide themselves when, where and how fast they work in online phases (Strasser 2011: 26). The learners are thus empowered since they are in control of their learning which leads to an increase in their motivation (King 2016: 7). Nevertheless, blended learning has its disadvantages too and can present challenges. Learners, for instance, are required to have a certain amount of technical competencies. Without this, they might be overwhelmed and cannot fully profit from blended learning. Teachers, on the other hand, need to know how to teach face-to-face and online. Lastly, the implementation of blended learning is linked to high development costs (equipment, training) (Strasser 2011: 27-28).

Blended learning can take the form of what is called *flipped classroom* (Gruba, Hinkelman & Cárdenas-Claros 2016: 140). *Flipped classroom*, or *Inverted classroom* (Schaumburg & Prasse 2019: 184), describes a learning scenario in which the activities that are typically done in the classroom are swapped with those taking normally place outside instructional time (Arnold et al. 2018: 149). This means that the students are provided online with the content they should acquire (Kergel & Heidkamp-Kergel 2020: 62) and interact with before class (Gruba, Hinkelman & Cárdenas-Claros 2016: 140) in a self-directed manner as well as independently (Arnold et al. 2018: 149). This content or input is presented using short

videos (Schaumburg & Prasse 2019: 184-185) which are either produced by the teacher or someone else (Heusinger 2020: 33) and are available freely online or on a learning platform (Arnold et al. 2018: 150). Other materials such as podcasts or written documents can be employed as well (Arnold et al. 2018: 150). In class, the students then practice and consolidate what they have learned (Schaumburg & Prasse 2019: 185) by completing activities individually, in pairs or in groups (Heusinger 2020: 33) or by participating in discussions (Gruba, Hinkelman & Cárdenas-Claros 2016: 140). Moreover, while the students work in class, the teacher has the opportunity to answer comprehension questions (Kergel & Heidkamp-Kergel 2020: 62), focus on weaker students (Gruba, Hinkelman & Cárdenas-Claros 2016: 140), help learners who still struggle with the content (Sams & Bergmann 2013: 16; Schaumburg & Prasse 2019: 185) and challenge those who have already grasped what they had to acquire (Sams & Bergmann 2013: 16).

2.3. Digital devices and tools and the Austrian curricula

The present chapter aims to illustrate to what extent and in which form digital devices and tools and their implementation in the (language) classroom are mentioned in the Austrian curricula. For this purpose, the curriculum of the *AHS* (*Allgemeinbildende Höhere Schule*), the *Mittelschule* and the *HAK* (*Handelsakademie*) were examined, focusing on the general, cross-curricular part and the one on foreign language teaching.

The section of the *AHS* curriculum relating to the general educational objective already names “Medienerziehung” and “Erziehung zur Anwendung neuer Technologien” as teaching principles (BMBWF 2024a). *Medienerziehung* refers to the pedagogical application of media, which constitute the subject and object of the lessons, aimed at introducing students to using all media in a critical and reflective way (BMBF 2014: 2). Furthermore, the terms “Medien” and “Informations- und Kommunikationstechnologien” can be found in the two educational areas “Sprache und Kommunikation” and “Mensch und Gesellschaft” of the upper secondary level (BMBWF 2024a). It says that students should learn to handle media critically and use them constructively and, by developing digital competencies, be able to employ information and communication technologies in a responsible and reflective manner (BMBWF 2024a). Additionally, the requirement for teachers to incorporate digital devices and tools in the classroom can be deduced from the second general didactic principle included in the curriculum of the *AHS* and *Mittelschule*, which reads as follows: “Lehrerinnen und Lehrer bieten einen digital unterstützten Unterricht und nutzen innovative Lern- und Lehrformate” (BMBWF 2024a; BMBWF 2024b). It is, amongst others, also indicated that the use of digital devices and

media in lessons helps to establish a link to the everyday lives of learners, creates new opportunities in terms of didactics and methodology, and makes it possible to communicate, collaborate and access up-to-date information and a wide range of materials from any location and at any time. The section concerning this second general didactic principle further states that educators are supposed to make use of learning management systems and learning platforms, and thus digital tools, as well. The same section finally underlines that digital media complement traditional teaching materials but should not replace them (BMBWF 2024a; BMBWF 2024b). “Medienbildung” is mentioned as an overarching topic and is to be incorporated into foreign language teaching, amongst others, according to the curriculum of the *AHS* and *Mittelschule* (BMBWF 2024a; BMBWF 2024b). In the corresponding section, both analog and digital media are named as well as their benefits and risks. As part of media education, learners should, for instance, be encouraged to use media technologies creatively but critically and to create content themselves (BMBWF 2024a; BMBWF 2024b). Foreign language teachers are instructed to integrate digital media into their classrooms to enable engagement with authentic language models. Internet resources are to be used in connection with the transmission of information about a country and its culture (BMBWF 2024a; BMBWF 2024b). According to the *AHS* curriculum, media should also be employed when giving presentations. Last but not least, it explicitly emphasizes that foreign language teaching should involve the versatile use of information and communication technologies (“Informations- und Kommunikationstechnologien (IKT) sind auch im Fremdsprachenunterricht vielseitig zu nutzen (zB bei der Bearbeitung von Lehrinhalten, zur Schulung von Arbeitstechniken und im Rahmen der Führung von Portfolios”) (BMBWF 2024a), including digital devices and tools.

Turning to the curriculum of the *HAK*, it can, first of all, be said that it formulates as a general educational goal that students graduating from this type of school should have competencies that allow them to utilize information and communication technologies (BMBWF 2014: 1). This already suggests that they should learn how to work with them in class. In the context of the general didactic principles, it is mentioned that diverse media may be integrated into the classroom to improve the quality of the teaching and learning and support learning processes and that, besides this, *media competence* should be developed (BMBWF 2014: 6). The fact that information and communication technologies are to be used in foreign language teaching, amongst others, is also justified by the following sentence: “Der Einsatz von Informations- und Kommunikationstechnologien ist in allen Unterrichtsgegenständen anzustreben” (BMBWF 2014: 6). Electronic media are mentioned, too, and should be incorporated in the lessons and exam situations (BMBWF 2014: 6). Finally, and in contrast to

the curriculum of the *AHS*, that of the *HAK* names “Medienbildung” as a teaching principle which seeks to raise awareness for the conscious use of and critical engagement with media (BMBWF 2014: 7).

In a nutshell, it can be said that digital devices and tools, which might not always be mentioned directly under these terms, but, as I argue, are part of *media*, *digital media*, *electronic media*, *new technologies* and *information and communication technologies*, appear several times in the three curricula examined. Teachers of all subjects should integrate them in their classrooms particularly in order to comply with the general didactic principles and teaching principles and to achieve the general educational goals.

3. Digital devices and tools for (language) teaching and learning

The second chapter of the literature review, first, provides information on different digital devices (e.g. tablets, smartphones, interactive whiteboards, smartboards and document cameras) and tools that can be integrated into the (language) classroom. Second, it offers an insight into the findings of previous international and national studies concerning the practices, beliefs and experiences of English teachers regarding digital technology in teaching. Third and lastly, numerous criteria through which digital tools can be evaluated and selected are presented.

3.1. Digital devices

As mentioned in subchapter 2.1., *digital devices* describe electronic devices that “can receive, store, process or send digital information” (UNICEF Albania 2020: 2). In the following, five types of digital devices are discussed as well as some ideas on how they could be employed in the (language) classroom.

3.1.1. Tablets and smartphones

Tablet PCs are personal computers that can be carried around and feature a touchscreen (Golonka et al. 2014: 75). They provide users with the possibility of accessing wireless Internet and downloading applications. By using some conferencing tools, they can even be employed for communicating online (Hummel et al. 2021: 284). A tablet that is popular is the iPad by *Apple* (Gleason 2015: 16).

Smartphones represent cell phones capable of carrying out a wide range of functions of computers and typically featuring a touchscreen (Whyte 2020: 430). They, amongst others, grant access to wireless Internet and allow making phone calls (Hummel et al. 2021: 284),

recording audio files and videos and taking pictures (Thömmes 2023: 34). As with tablets, users can download different applications (Hummel et al. 2021: 284).

In class, tablets and smartphones are useful for students to look for information for group work, create audio files or videos, communicate with each other and work together. Smartphones and tablets may also be used as e-books and to give learners feedback and draw their attention to project deadlines. Their portability and lightness enable easy transportation and thus learning from anywhere and at any time. Furthermore, these devices can be connected to television screens or smartboards and it is also possible to project their display via a document camera. Learning content can be visualized by means of different multimedia formats like audio, pictures and videos usable on smartphones and tablets (Hummel et al 2021: 285). In addition, the Bundesministerium für Bildung, Wissenschaft und Forschung (2018) states that students may employ tablets or smartphones to review subject matter at their own pace with interactive quizzes and tutorial videos. It is pointed out that animations assist them in understanding complex issues. Regarding the language classroom, learners can videotape dialogs or interviews, which allows a greater number of pupils to practice pronunciation simultaneously, and then present them in class or to the teacher (BMBWF 2018). What, however, needs to be kept in mind is that tablets and smartphones must be charged regularly to work during the lesson (Hummel et al. 2021: 285).

3.1.2. Interactive whiteboards, smartboards and document cameras

Interactive whiteboards can be described as digital blackboards being mountable on a wall or freely movable on which writing and drawing are possible. They are connected to a computer that displays image data on the board via a projector (Leupold 2010: 400) and replace the traditional blackboard (Schaumburg & Prasse 2019: 217). When interacting with the whiteboard, one can either use one's finger to write or a special pen (Leupold 2010: 400). Leupold (2010: 400) points out that interactive whiteboards increase vividness as they permit the generation of dynamic board designs by means of videos or images. Furthermore, teachers can save the screens and reuse them in another lesson (Sharma & Barrett 2007: 83). By using interactive whiteboards, authentic web content can be integrated into the classroom (Golonka et al. 2014: 72). Teachers have the possibility to project films or worksheets and move items around on the screen facilitating the completion of ordering or matching tasks in the classroom (Heim & Ritter 2012: 112-113).

One brand of interactive whiteboards is the smartboard (Heim & Ritter 2012: 113). Concerning the smartboard, Hummel et al. (2021: 279) state that it is useful for showing

pictures, presentations or videos as well as information the learners have to, for example, correct on the screen. In addition, students can be asked to write their ideas on it when brainstorming (Hummel et al. 2021: 279). The use of smartboards in the classroom offers several advantages. First of all, teachers remain visible to their learners and do not disappear behind a computer since they have the possibility to write on the device and navigate all applications of the computer via its touchscreen. They can also save all information gathered on the screen on the computer, convert notes taken by hand into a text that is editable and give them to learners who are absent. However, some professional instructions and practice regarding the use of the smartboard are needed to, for instance, avoid it being employed as an ordinary projection screen only (Hummel et al. 2021: 279-280).

In contrast to an interactive whiteboard and smartboard, a document camera is a digital overhead projector that can, in general, be utilized to display worksheets or pages from a book. With more advanced versions of this type of device, it is even possible to scan documents and record videos. In the classroom, a document camera can be employed to render illustrations visible to the students when reading a story from a book, or a quiz in order not to have to print it out for each learner. Solutions may be projected via the document camera to enable the pupils to see them when comparing. Using this type of hardware is easy and saves paper and money as not every material has to be printed out (Hummel et al. 2021: 281-282).

3.2. Digital tools

Digital tools are platforms, programs, software, applications and resources, being either online or offline, that are usable on digital devices such as computers or mobile devices and assist people in completing tasks (Moorhouse & Yan 2023) (see subchapter 2.1.). Below, a variety of digital tools are presented as well as some ideas on how they could be used in (language) teaching and learning.

3.2.1. Digital tools for collaboration

Padlet

Padlet is an online noticeboard maker (Strasser 2018:112) and its basic version can be employed for free (Brand et al. 2021: 251). To create a Padlet noticeboard, users need to go to the website (Strasser 2018: 112) or download the app and register using, for instance, one's *Google* or *Microsoft* account (Brand et al. 2021: 251-252). The students do not have to log in (Brand et al. 2021: 252) but can access and edit the noticeboard via a link generated by the teacher (Strasser 2018: 113) or a QR code (Brand et al. 2021: 252). Besides text, images and videos, users have

the opportunity to add audio files, drawings and links to the noticeboard (Brand et al. 2021: 251). Regarding teaching, *Padlet* can be employed for collaborative notetaking (Dembo & Bellow 2013), cooperative writing (Haß & Offinger 2019: 12) as well as for brainstorming activities (Strasser 2018: 112) which are, for example, carried out at the beginning of lessons and allow the students to indicate what they link to a certain topic, text or picture (Busch 2020: 14). Contributions can be, amongst others, edited, commented, liked or rated anytime and anywhere (Brand et al. 2021: 251-252). Moreover, Strasser (2018: 115) states that *Padlet* represents a platform allowing teachers to ask their students to give them feedback after a lesson. They may communicate important information to their pupils using *Padlet*, set assignments or share materials (Brand et al. 2021: 254). Teachers can also have their students engage in a quiz or guessing game. Every day, they post something (word, video, image, etc.) containing a hint about a certain person to the board and the pupils have to add their guesses (Strasser 2018: 115). In addition, *Padlet* can also be used to teach, for instance, new words, idioms and proverbs. The teacher regularly posts a new item and the students should look for a translation and invent a sentence (Strasser 2018: 115). *Padlet* can, furthermore, be integrated into the introduction to a new unit. The teacher documents what the students already know about the topic to be discussed and what they want to know (Dembo & Bellow 2013). Then, while working on the new unit, the class returns to this noticeboard to check if what they know is true and whether they have learned what they wished (Dembo & Bellow 2013). Students can also be instructed to review and/or summarize key points at the end of a lesson or type in five things they remember about the theme discussed in class (Fisher 2017: 164). *Padlet* can be used to offer the students the opportunity to post questions and get answers shortly before an exam (Dembo & Bellow 2013). Fisher (2017: 165) proposes using it for administrative purposes such as managing the topic choice for group assignments. The teacher provides a ‘wall’ with several topics and the students add their names or the names of their team members to the topic they would like to work on (Fisher 2017: 165). Similarly to this, *Padlet* can be utilized when allocating presentation topics (Busch 2020: 14). Lastly, learners may create a noticeboard and access it while giving a presentation or talking about a book or they compile a reading journal by means of this tool (Brand et al. 2021: 254).

Microsoft Teams (for education)

Microsoft Teams constitutes a tool for collaboration (Ferreira 2020: 13) that can be used to, amongst others, hold meetings and make calls (Microsoft Teams n.d.). With a valid school email address, students and teachers can utilize *Microsoft Teams for education*, representing an app for schools, for free (Microsoft Education n.d.). Teachers can create class teams and add their

students via their names or email addresses (Microsoft Support n.d.), chat with their learners or other educators or have live class meetings (Microsoft n.d.). Moreover, with *Microsoft Teams for education* they have the possibility to, for instance, upload files, give assignments and feedback, grade papers, track their students' learning progress and employ integrated apps such as *Quizlet*, *Microsoft Forms* and *Polly* for quizzes or polls (Microsoft n.d.).

Other tools that can be used for collaborative writing are *MeetingWords*, *Edupad* (Strasser 2018: 92), *Quip*, *Google Docs* and *Framapad* (Bidenko 2019: 23).

3.2.2. Digital tools for videoconferencing

Skype

Skype is a video conferencing software (Bahlo et al. 2014: 62) that is free and Internet-based (Goodwin-Jones 2005: 9). People utilize this tool to connect and meet (Dembo & Bellow 2013). Regarding language learning, *Skype* allows for class-to-class exchanges and for pairing users living miles apart for conversational practice at no cost (Goodwin-Jones 2005: 9). A web-based connection of students from different countries helps gain insight into the real life of other societies, their beliefs, concerns and issues (Dembo & Bellow 2013).

Zoom

Zoom represents a videoconferencing tool that allows teachers and students to meet online at the same time using a cell phone, laptop or personal computer (Carnegie Mellon University n.d.). The basic version of *Zoom* is free and allows users to host sessions with more than two participants that last up to 40 minutes. When wanting to organize an online meeting, the teacher needs to create an account. The students, however, can join the session via a link without signing up (Hummel et al. 2021: 290-291). *Zoom* can be utilized for teaching (The University of North Carolina at Chapel Hill n.d.) and provides instructors with many features (Zoom n.d.). First of all, the teacher can set up breakout rooms to have the students learn in small groups (Zoom n.d.), discuss or do some brainstorming (Reed 2023). Furthermore, the students can post questions or share ideas in the chat and give non-verbal feedback (e.g. raising their hand virtually) (Zoom n.d.). The teacher can flip his or her classroom by pre-recording a lecture that the students have to watch before class and having them then apply the knowledge and hold discussions in the lesson (The University of North Carolina at Chapel Hill n.d.). Other reasons for employing *Zoom* for teachers are to get together with the learners to discuss the solutions to assignments given and completed by them individually at their own pace as well as possible

problems or to meet pupils or their parents to answer their questions. Moreover, students may use this tool when working on projects or presentations (Hummel et al. 2021: 290).

Other digital tools that can be used for videoconferencing are *BigBlueButton* or *Jitsi* (Brand et al. 2021: 39-40).

3.2.3. Digital tools for content creation and sharing

LearningApps

LearningApps is a web-based tool that allows for the creation of interactive, multimedia teaching and learning blocks called “apps” (ÖSZ 2019: 5). The software provides its users with about 20 prefabricated activity formats such as “Paarespiel (Memory)”, “Multiple-Choice-Quiz”, “Millionenspiel”, “Gruppenpuzzle”, “Kreuzworträtsel”, “Hangman” (ÖSZ 2018: 12), “Lückentext” or “Paare zuordnen” (ÖSZ 2019: 5). Teachers and students can either create their own “apps” after having registered or choose any of the existing ones for teaching and/or learning (ÖSZ 2018: 12). Moreover, one has the opportunity to add pictures, sound and videos and combine these media (ÖSZ 2018: 12). When using *LearningApps*, users can also employ other teaching tools included like chats, mindmaps or *Etherpad*, a writing software (ÖSZ 2018: 12-13). Regarding its use in the classroom, the *Österreichische Sprachenzentrum* (2018: 13) states that *LearningApps* lends itself to the training of different task formats being part of the written Matura as well as to *Lernzielkontrollen*. Furthermore, students can be asked to create “apps” for each other (ÖSZ 2018: 13) which allows them to recap specific EFL topics (Strasser 2018: 21). Exercises in *LearningApps* may also be utilized in teaching for practice or securing results (Brand et al. 2021: 207-208).

Canva

Canva is a free, web-based graphic design program that offers users numerous editable graphics, designs and templates like infographics, flyers, book covers, posters, post cards and Instagram-postings. Moreover, users are offered the possibility to add images, interactive modules, audio and videos to their work. *Canva* can be employed in the browser or as an app and does not require registration. When finished, users can share their final product via a link or a digital tool such as *Microsoft Teams* or download it. *Canva* allows teachers to create appealing worksheets and they as well as the learners may use it to produce interactive presentations (Brand et al. 2021: 235-239). Brand et al. (2021: 239), furthermore, mention that teachers can ask their students to compile a reading diary, a handout for a presentation or a

movie poster. *Canva* is also a useful tool for presenting the outcome of group work (Brand et al. 2021: 239) or creating info flyers (Lorenz, Borchers & Schulz 2022: 52).

Prezi

Prezi is an online presentation tool (Busch 2020: 36) and an alternative to *Microsoft PowerPoint* (Boelmann 2015: 62). Users need to register on the website in order to be able to use the tool and to then select one of the diverse subscription types. For a free account, one should opt for 'basic' (Busch 2020: 36). To create a presentation, one clicks on "New Prezi", enters a title and a description and chooses one of the many templates provided (Strasser 2018: 66) or starts from scratch. It is also possible to convert a *PowerPoint* into a *Prezi* presentation (Busch 2020: 36). The tool provides users with a surface on which they can place their slides (Boelmann 2015: 62) and it, in addition, allows them to insert elements such as videos, text or images (Busch 2020: 36). After editing one's slides, one must decide on a sequence and create a so-called 'path' (Strasser 2018: 68). The finished *Prezi* presentation can be displayed by clicking on 'present' (Busch 2020: 36). Regarding the classroom, Busch (2020: 36) proposes integrating a *Prezi* presentation into the introduction to a new topic. *Prezi* can also be employed to secure the knowledge gained after discussing a topic or as multimodal support during a presentation (Busch 2020: 36). Students also have the possibility to create so-called "Lernlandkarten" (Boelmann 2015: 63). They first work on different topics individually and then assemble them in one 'prezi' (Boelmann 2015: 63). Furthermore, students can be asked to create their own grammar *Prezi* presentation featuring some notes and a video on the subject as well as example uses (Strasser 2018: 69).

Vocaroo

Vocaroo is an online platform useful for creating podcasts and other audio files of spoken interaction (Strasser 2018: 126). In order to record, one has to go to the *Vocaroo* website (Strasser 2018: 126), click on "Record" and when finished on "Stop" (ÖSZ 2018: 38). The audio file can then be either saved on one's computer or shared with a link (Strasser 2018: 127). Students can, for instance, be asked to write a short text about themselves and then record it using *Vocaroo*. They could also produce an audio file presenting their opinion on a controversial question. To practice intonation, stress and more, learners may be instructed to record themselves while reading a text aloud and are later given feedback by their classmates and/or the teacher (Strasser 2018: 128-129). Teachers can provide feedback on presentations or exercises or oral work assignments with this free tool (ÖSZ 2018: 39-40). Another tool that can be used for recording audio is *Audioboom* (Bidenko 2019: 14).

Book Creator

Book Creator is a tool that allows for the creation of e-books (Thömmes 2023: 26). Whereas the apps for IOS and Android devices are fee-based (Müller 2023: 77), the web version offers the opportunity to produce up to 40 e-books for free (Thömmes 2023: 26). Normally every user has to register, but for schools extra solutions are offered (Dausend 2019: 32). Teachers can ask their learners to create books individually or in groups and insert different media such as videos, texts, photos, audio or drawings (Thömmes 2023: 26). Dausend (2019: 35) proposes having the students write about their family and friends or a reading journal using this tool. Some types of e-books that could be created are comics, learning diaries, storybooks, photobooks and travel books (Müller 2023: 77). The finished e-book can be presented by the students, printed, sent to others and published on the Internet. Similar tools are *Educreations*, *Our Story* and *Adobe Spark* (Dausend 2019: 33).

YouTube

YouTube is a video sharing website that can be used for free and provides everyone with the opportunity to watch as well as to create, upload and share online videos (GCF Global n.d.) and educational resources (Mucundanyi & Woodley 2021: 100). It represents the world's biggest collection of movies, trailers, videos and clips and thus is a knowledge archive (Brand et al. 2021: 229). Videos can be viewed without having to sign up but if one desires to like, dislike, comment on or upload one, the creation of an account is necessary. To find a video or content on a specific topic, one can use the search bar at the top of the YouTube page (GCF Global n.d.). Moreover, when watching a video, the instructor and the pupils have the possibility to pause whenever they like and replay the content repeatedly. When wanting to incorporate *YouTube* into one's lesson, one only has to go to the website (Mucundanyi & Woodley 2021: 100). Teachers and students also have the opportunity to share videos by either copying their link and pasting it to any social network like *Facebook*, emailing it to someone or embedding the videos themselves in a website (GCF Global n.d.). In addition, teachers can also create a playlist on *YouTube* where they store all the videos they want to use in a lesson (Strasser 2018: 26) and allow their students to access it (Strasser 2018: 28). *YouTube* videos can be viewed to supplement the materials from the textbook, review a concept taught, illustrate an issue, introduce subject matter that is considered as difficult (Brook 2011: 40), provide cultural or linguistic content, experience different cultures, motivate learners or initiate a learning activity (Terantino 2011: 12). Aside from receiving information, students can create and then post to *YouTube* their own videos in which they use the target language (Terantino 2011: 14), write

comments on videos, upload video responses or communicate with those users that have left a comment on their contributions (Brook 2011: 41).

3.2.4. Digital tools for quizzes

Kahoot!

Kahoot! is a learning platform (Arroyo et al. 2022: 59) that provides teachers with the opportunity to create game-based quizzes (Johns 2015: 90) without having to pay money (Strasser 2018: 218). Compiling a quiz with this digital tool is easy (Johns 2015: 90). The first step for the teacher to take is to go to the *Kahoot!* website in order to register (Strasser 2018: 218). Then, the teacher has to decide on a topic and formulate questions about it (Strasser 2018: 218). According to Strasser (2018: 219), grammar points like different tenses, irregular words or verb forms, idioms and vocabulary fields represent some good topics for *Kahoot!* quizzes. However, the teacher can also use quizzes that have been set up by other people registered on *Kahoot!* (Johns 2015: 90). When aiming to use a quiz in the classroom, all the teacher has to do is to ask the students to go to the *Kahoot!* website on their smartphones (Strasser 2018: 218) and to provide them with the game PIN they have to enter to join (Johns 2015: 90). In contrast to the teacher, the pupils do not have to register to participate in quizzes. Before the start, however, they will be asked to log in with their real names or a nickname (Johns 2015: 90). The students then read the prompts that are either projected to a wall or board (Strasser 2018: 218) or displayed on the screen of an interactive board (Johns 2015: 90) and type a response into their cell phones (Strasser 2018: 218) or select one of the given, color-coded answers within a time set between five to 120 seconds (Johns 2015: 90). In quizzes, the participants are assigned a specific number of points for each question based on accuracy and time needed to respond and after the final question, they are shown the five players who have scored the most points. The teacher can save the class scoreboard as a document and keep it as a record (Johns 2015: 90). *Kahoot!* quizzes can not only be created by the teacher, but also by the students. The pupils can, for example, prepare a quiz and use it as part of their presentation (Strasser 2018: 218). Besides providing the students with the opportunity to compete with each other (Johns 2015: 90), these interactive quizzes are considered motivational by Strasser (2018: 218) and can be useful for quickly assessing students formatively and in a fun way (Johns 2015: 90). Learners may not only participate in quiz games as individuals but also in teams (Brand et al. 2021: 204). In addition to quizzes, teachers can integrate *Kahoot!* for surveys (Johns 2015: 90).

Quizizz

Quizizz allows teachers to create quizzes after having registered or to use an established quiz (ÖSZ 2018: 26). To enable the students to play a quiz, teachers have to provide them with an access code (Arroyo et al. 2022: 59). Teachers can choose between the so-called ‘live’ or ‘homework’ mode (ÖSZ 2018: 26). When selecting the first mode, the students have to enter a game code and a nickname before the teacher can start the quiz. In the ‘homework’ mode, enabling the pupils to answer the questions at their own speed, the teacher sets a deadline by which the students can complete the quiz (ÖSZ 2018: 26). Teachers may also provide their pupils with quizzes they can play repeatedly for individual practice (ÖSZ 2019: 5) or ask them to compile vocabulary or grammar quizzes for each other (ÖSZ 2018: 27). Moreover, *Quizizz* is for free and offers teachers the possibility to see how many items their students have correct and to obtain feedback on the learners’ learning status or on individual performances (ÖSZ 2018: 26-28). Furthermore, it lends itself as an introduction to a new topic but also as “Lernzielkontrolle” (ÖSZ 2018: 27). In addition, users can share their quizzes with others (ÖSZ 2018: 28), print them or those offered and use them offline (ÖSZ 2018: 27-28).

Other tools that can be used for quizzes are *Socrative* (Bidenko 2019: 16) and *Quizlet* (Dausend 2019: 53).

3.2.5. Digital tools for brainstorming and surveys

Mentimeter

Mentimeter is an online presentation tool (Hummel et al. 2021: 293) that allows for creating and hosting surveys of different formats such as multiple-choice, open questions, picture choice or rankings (Thömmes 2023: 28). It can be used for free (Hummel et al. 2021: 293-294) but registering on the part of the teacher is mandatory (Brand et al. 2021: 265). In order to participate in a survey, a code must be entered on the Mentimeter website (Brand et al. 2021: 265). The results are visible to all (Thömmes 2023: 28), shown in real-time and downloadable as a PDF document after completing the survey (Brand et al. 2021: 266). Teachers can employ *Mentimeter* to do some brainstorming activity on a topic, get feedback on the lesson (Thömmes 2023: 28) and to find out to what extent the learners understand a topic and where additional support is needed (Hummel et al. 2021: 293). Furthermore, learners may be instructed to indicate what they link to a certain topic at the beginning of a teaching sequence (Brand et al. 2021: 266).

Tricider

Tricider is a free survey tool that does not demand registration for participation (Schaeffer-Lacroix 2012: 218). One simply goes to the *Tricider* website, types a problem or task into the field displayed on the homepage and adds some instructions for the students or an example. Afterward, one clicks on the button ‘save’ and later on ‘share and invite’. The teacher copies the link generated and shares it with the students (Strasser 2018: 116-117). This tool can be used to brainstorm, collect, discuss and vote for ideas. It also allows teachers to test their students’ knowledge and ask them for feedback on their teaching (Tricider.com n.d.).

Other tools that can be used for surveys are *Doodle*, *Nearpod*, *SpeakUp*, *Google Forms*, *2Reply* (Bidenko 2019: 17), *Socrative*, *PINGO* and *Invite* (Brand et al. 2021: 267). *Popplet*, *Mindmeister*, *Mind42* or *Scribblar* are available for brainstorming activities (Strasser 2018: 102).

3.3. Previous research in the field of digital devices and tools in ELT

The following chapter presents the findings of previous studies on the integration of and beliefs and experiences regarding the use of digital devices and tools in teaching and learning by English teachers in and outside Austria. What needs to be kept in mind when reading this chapter is that *digital tools* encompass both, digital tools and digital devices, in some of the studies described below (e.g. Jones 2022 and Høyvik 2022). However, a distinction between these two was made whenever possible.

Moorhouse and Yan (2023) investigated the use of digital tools by teachers of English working in a primary or secondary school in Hong Kong. 83 schoolteachers participated in the survey and 22 of them then agreed to take part in a follow-up interview. While 42.2% of the respondents indicated that they used digital tools “always”, 54.2% chose the option “sometimes”. Only 3.6% of the 83 survey participants “rarely” integrate digital tools in their English teaching and none completely dispenses with their use. The digital tools mentioned by the English teachers were, amongst others, *Kahoot!*, *Google Form*, *Padlet*, *Google Classroom*, *YouTube*, *Formative*, *Nearpod*, *BBC*, *Quizizz*, *Book creator*, *Google Docs*, *Mentimeter*, *Edpuzzle*, *Quizlet*, *Canvas*, *Screencast-o-matic*, *WhatsApp* and *Zoom*. Based on the participants’ responses, learning management tools like *Google Classroom* offer, for instance, a space for sharing and storing materials and for giving homework as well as feedback. Digital tools for delivering interactive presentations such as *Nearpod* enable teachers to use slides that are multimodal and functions that are similar to those of a game and to increase interactivity in the classroom. Additionally, *Kahoot!* or other quiz tools are considered useful by the respondents

as they display the answers and results immediately and thus the students' performance, can be employed with all students and individually, possess functions for automatic grading and allow for an easy and fast creation of activities that are completed in or outside the language lesson. The quizzes compiled are, for example, employed to check the pupils' comprehension of a topic and to evaluate their linguistic knowledge. Regarding collaboration tools like *Padlet* or *Google Docs*, the participants indicated that they offer the students the opportunity to cooperate in order to answer questions and solve problems and to respond to the prompts from the teacher anonymously and at the same time. Their contributions lend themselves to oral discussions (Moorhouse & Yan 2023). The participants make use of video-hosting digital tools (e.g. *YouTube*), too, since they "provide a bank of authentic multimodal resources, specific language-learning resources (e.g., phonics videos), and teacher-created resources" (Moorhouse & Yan 2023). Websites such as *BBC.com* are viewed as useful because they facilitate exposure to language that is authentic. Furthermore, some of the interview participants mentioned that they have their students look for information and do research by visiting different websites like *Wikipedia* (Moorhouse & Yan 2023).

The second study that examined the use of digital devices and tools by English teachers was conducted by Jones (2022) as part of his Master's thesis. 183 EFL teachers working in Norwegian lower secondary schools filled in his questionnaire and nine took part in a follow-up interview (Jones 2022: II). Based on the questionnaire results, the digital tools employed by the participants are, for instance, e-books, *YouTube*, *Teams*, *Quizlet*, *Kahoot!*, *Onenote*, *Google*, learning platforms (Jones 2022: 48), *Prezi*, *TikTok*, *Instagram*, *Netflix*, *Disney+*, *Word*, *Book creator*, *Tedtalks*, *Wordwall*, *Flipgrid*, *Google Classroom*, *Padlet*, *British Council*, *Spotify*, *Nearpod*, *itslearning*, *Wikipedia* (Jones 2022: 106-115), *Google Docs* and *Google Maps* (Jones 2022: 122). They work with iPads, smartphones, PCs, smartboards (Jones 2022: 48) and laptops (Jones 2022: 116). Concerning the frequency of their use of digital tools, 51% of the respondents indicated integrating them about one to three times in their English teaching each day (Jones 2022: 51). More than half of the EFL teachers surveyed prefer using digital tools for grammar work, games, writing exercises and submissions rather than the textbook (Jones 2022: 50). In addition, the language skill the respondents like to practice the most with digital tools is listening, followed by writing and reading. Speaking, however, is the skill they teach the least through them (Jones 2022: 52-53). The teachers employ digital tools to conduct surveys, watch movies or videos, play music, show what they are doing, improve pronunciation, learn about the history of a country, plan lessons, and engage their learners (Jones 2022: 220-235). Some reasons for using digital tools indicated are the following: for having the students work with

authentic material, to increase their digital skills, to be more up to date, to provide resources that are relevant to the pupils, to differentiate, to vary one's teaching and to communicate with the students and the parents (Jones 2022: 55-56). According to the participants, the benefits of digital tools are that they, amongst others, can sometimes be helpful in engaging students in their language learning, provide an endless range of resources, motivate the students, increase engagement in class, make learning more fun and allow to have everything in one place. However, more than half of them reported that the students get distracted. Other challenges met include technical issues, encountering online content that is inappropriate for the students and the lack of digital competencies (Jones 2022: 45-47). The English teachers interviewed regard digital tools as useful as they allow them to trace their students' development and progress more accurately (Jones 2022: 63). Furthermore, they "can 'control' the content provided to the pupils and with this keeping all pupils on the same page" (Jones 2022: 63). They also mentioned that they use them as a supplement to the textbook, as a source for interactive activities and reading materials, for their lectures or presentations, to communicate, to review/correct their students' works (Jones 2022: 63-65), to share documents or files, listen to authentic language and for hand-ins (Jones 2022: 333). One instructor opens the textbooks online on the smartboard to make sure that the pupils are at the same page (Jones 2022: 332). The reasons why the interviewees use digital tools are, amongst others, that the students need to learn how to work with them productively and creatively as they are part of their everyday lives, that they render the materials more interactive and that they allow for individual teaching/learning (Jones 2022: 65-67). However, one teacher says that the students "learn to rely heavily on their digital assets" (Jones 2022: 66).

In contrast to Jones (2022), Høyvik (2022) worked in the framework of her Master's thesis with, amongst others, upper-secondary teachers. More precisely, she interviewed in total four Norwegian upper secondary school English teachers (Høyvik 2022: 2). Regarding their use of digital tools, they said that they use them daily and in each English lesson (Høyvik 2022: 55). In addition, the digital tools they make most frequently use of are *Teams* and *OneNote* (Høyvik 2022: 48) and they also integrate the computer in every English lesson more or less (Høyvik 2022: 55). Other digital tools employed are *Kahoot!*, *PowerPoint*, *Word*, *Padlet* and *Mentimeter* (Høyvik 2022: 55). Furthermore, the purposes for using digital tools reported by the English teachers are the following: visualizing things, creating lessons that are varied, allowing the students to watch and listen to authentic interactions and finding teaching material that matches the students' interests and level (Høyvik 2022: 55-56). According to them, the benefits of digital tools like *Teams* or *OneNote* are that they make teacher-student and student-

student interaction easier. The four English teachers also thought that utilizing digital tools could promote language development in relation to vocabulary, reading comprehension and pronunciation. They mentioned as well that the use of a computer for writing is beneficial as the students then have the possibility to easily modify the text and employ digital dictionaries and a spelling program (Høyvik 2022: 51-52). Two interviewees also considered working with digital tools as a way of increasing pupils' motivation to learn English. However, two of the four Norwegian upper secondary school English teachers commented that one challenge would be that the students get distracted when using digital tools since they receive notifications or messages (Høyvik 2022: 63-64).

Moving on from international studies to those conducted in Austria, one finds a Master's thesis research project by Pilz (2022) in the context of which five in-service EFL teachers working in lower-secondary schools in Vienna were interviewed (Pilz 2022: 51) on, amongst others, their use of digital devices and programs for ELT and their beliefs regarding the advantages and drawbacks of digital learning (Pilz 2022: 46). Three teachers report that portable devices are at the teachers' and students' disposal and smartboards and computers can be found in all their classrooms while the classes of the other two are equipped with installed projectors and attached computers. Furthermore, two teachers utilize digital devices weekly, one bi-weekly, one regularly and one hardly ever (Pilz 2022: 68-69). The digital devices and tools that are integrated into their EFL lessons are the smartboard, laptops (Pilz 2022: 111-112), PC, projector (Pilz 2022: 123), the *HELBLING e-zone*, online dictionaries, *English4u* website, *LearningApps.org*, *www.newsinlevels.com*, *Kahoot!*, online quizzes, word field websites, *Microsoft Teams* (Pilz 2022: 69-70), *digi4school*, *Quizlet* and *YouTube* (Pilz 2022: 137-139). The *HELBLING e-zone* is an online platform that is employed for completing tasks or cyber homework (Pilz 2022: 122), or, in general, to do interactional activities online either at home or at school and for online revisions of the units discussed (Pilz 2022: 70). For introducing or immersing into a topic, internet research is conducted, or presentations are prepared using digital devices. They are implemented to have the students compile texts for presentations or portfolios and to thus promote productive skills like writing (Pilz 2022: 70-71). The teachers make use of websites for grammar activities (Pilz 2022: 70) like *English4u* and of *LearningApps.org* to do so-called 'Learning Apps' on different topics, vocabulary and grammar (Pilz 2022: 123). Online dictionaries are also accessed (Pilz 2022: 70) so that, for example, the learners or the teacher can look something up (Pilz 2022: 122-146). Articles about the latest news are read and reading exercises are completed on the webpage *www.newsinlevels.com* (Pilz 2022: 70). *Microsoft Teams* is utilized for communication, sharing content (Pilz 2022: 70-71)

such as self-created tasks, quizzes or worksheets (Pilz 2022: 112-113) as well as for displaying the individual steps while explaining them orally or providing the learners with instructions online after giving them verbally (Pilz 2022: 71). In addition, online tasks are completed as homework using *Quizlet* or *digi4school* and *YouTube* is accessed for videos (Pilz 2022: 138-139). Pilz (2022: 71) also states that *Kahoot!* encourages learners to play an active role in the lesson and offers fun vocabulary quizzes. Word field exercises promote active participation in the classroom by having the students enter words on their cell phones, which then become visible to everyone on the shared screen (Pilz 2022: 71). The smartboard allows the teacher to visualize the online and app version of the English books *More* (Pilz 2022: 69) and enter the solutions when working with the students and comparing (Pilz 2022: 145). Pilz (2022: 85) mentions that speaking exercises do not appear on the teachers' digital agenda. While three interviewees give online homework sometimes (Pilz 2022: 113; 130) or every now and then (Pilz 2022: 138), one only assigned tasks to do at home during lockdowns and distance learning phases (Pilz 2022: 145) and another one exclusively asked her ninth graders to complete exercises after school the previous year since, in contrast to her other students, they possess laptops (Pilz 2022: 122-123). The digital tools used for online homework mentioned are the *HELBLING e-zone* (Pilz 2022: 112; 123), *MS Teams* (Pilz 2022: 112-113), different websites (Pilz 2022: 123), videos (Pilz 2022: 130), *Quizlet*, *digi4school* (Pilz 2022: 138) and *Word* (Pilz 2022: 145). According to the teachers, the benefits of using digital devices and tools in teaching are, first of all, that the students are more motivated and their interest as well as fun are stimulated (Pilz 2022: 71) since, amongst others, their employment "ties in with the students' private applications and thus establishes a link to their own reality and prior (technical) knowledge" (Pilz 2022: 71). Learning becomes more entertaining and pleasurable (Pilz 2022: 86) and feelings of autonomy and accomplishment are evoked as the learners have the opportunity to work individually and at their own pace (Pilz 2022: 71-72). The integration of digital devices and tools also enables multimodal visualization, varied activities, effortless access to pictures and videos, sustainable teaching (e.g. easy adaption and reuse of worksheets) (Pilz 2022: 72) and the incorporation of current topics (Pilz 2022: 130). It allows students to practice using technology (Pilz 2022: 130) as well as to acquire some know-how in general (Pilz 2022: 138). The use of digital media offers a welcome change for the students, too (Pilz 2022: 113). The *HELBLING e-zone* and other tools assist teachers in testing, correcting and evaluating and thus render their work easier (Pilz 2022: 72) and save them time (Pilz 2022: 113). They also provide them with an overview of their learners' proficiency, gaps in knowledge (Pilz 2022: 72) and who has done the task (Pilz 2022: 113). Besides that, digital technology

allows teachers to expose their students to the output of native speakers and speech that is used in real life. However, according to the teachers interviewed there are some drawbacks regarding the integration of digital devices and tools in teaching and learning as well. The use of tools and particularly the Internet is associated with distraction and the challenge to have the learners focus on the exercises. The students also may encounter language that is grammatically incorrect. Other drawbacks are that the basics (orthography, sentence formation, ...) are possibly neglected and that the development and updating of digital material are time-intensive (Pilz 2022: 72-74). When facing complications or problems with computers or phones, one interviewee changes his/her plan (Pilz 2022: 66).

Klein (2023) conducted interviews with eight Austrian English teachers from five different provinces (Lower Austria, Upper Austria, Vienna, Tyrol and Styria) working at lower-secondary schools (Klein 2023: 48-49). She found out that they use digital tools such as *HELBLING e-zone*, *Microsoft PowerPoint*, *Microsoft Word*, *Learningapps.org*, *Kahoot!*, *Quizlet* (Klein 2023: 107-108), *Moodle*, *Super Teacher Tools*, *Lyrics Training* (Klein 2023: 74), *live worksheets* (Klein 2023: 78), *digi4school*, *Microsoft Outlook*, *Microsoft Teams*, *Microsoft OneNote* (Klein 2023: 81), *Google Classroom* (Klein 2023: 85), *British Council*, *Edpuzzle* (Klein 2023: 89), online dictionaries, *More! Media app* (Klein 2023: 92-93), *YouTube*, *Mentimeter*, *AnswerGarden* and *FlipGrid* (Klein 2023: 98). One interviewee also incorporates a platform that provides the students with the possibility of creating and uploading memos (Klein 2023: 89). Based on the findings, one can say that *Moodle* is employed for providing students with the homework and access to exercises (Klein 2023: 74) and the *HELBLING e-zone* for cyber homework and having the learners do a progress check after finishing a unit in the textbook (Klein 2023: 77). *Microsoft Outlook* and *Microsoft Teams* are utilized for communication purposes (Klein 2023: 81) and the latter is also incorporated for collecting homework (Klein 2023: 92). Whereas homework texts are typed in digital form using *Microsoft Word*, vocabulary is written down in *Microsoft OneNote* (Klein 2023: 81). One interview participant integrates *Google Classroom* for having learners create texts that the teacher can correct online and lets them generate PowerPoint presentations (Klein 2023: 85). YouTube videos are included to explain topics in detail (Klein 2023: 98).

3.4. Evaluation and selection of digital tools for (language) teaching and learning

When browsing the Internet for apps, platforms, programs and the like, it becomes apparent that there is a multitude of digital tools available. Educators may therefore ask themselves how

to choose appropriate tools for their classroom from this wide range of options. Hummel et al. (2021: 297-303) present the *Rubric Model* compiled by Western University which comprises eight categories and diverse criteria by means of which digital tools can be assessed by educators and the selection of appropriate ones for the classroom context is facilitated. Each criterion is judged against three different standards (*works well*, *minor concerns*, or *serious concerns*) and can be excluded if considered irrelevant (Hummel et al. 2021: 297).

The eight categories are the following: *Functionality*, *Accessibility*, *Technical*, *Mobile design*, *Privacy*, *data protections*, *and rights*, *Social presence*, *Teaching presence* and *Cognitive presence* (Hummel et al. 2021: 297-303).

The first category is called *Functionality* and features four criteria, namely *Scale*, *Ease of Use*, *Tech Support/Help Availability* and *Hypermediality*. *Scale* refers to the extent to which a tool is able to accommodate different class sizes and learning environments whereas *Ease of Use* is about the design characteristics rendering its application user-friendly and intuitive (Hummel et al. 2021: 298-299). Beyer (2021: 165) also considers a user-friendly design as vital feature when choosing a tool. The third criterion, *Tech Support/Help Availability*, is dedicated to the question of where to get help when facing technical problems and *Hypermediality* focuses on the evaluation of the way in which the functions of the tool assist and motivate learners and the teacher to use and communicate via a range of forms of media (audio, video, ...) in a nonlinear and flexible manner (Hummel et al. 2021: 298-299).

The second category is *Accessibility* and its first criterion, *Accessibility Standards*, discusses the description of a digital tool and that it should inform about the extent to which and how it achieves the standards of accessibility. *User-Focused Participation* focuses on whether it caters for the needs of diverse students and shows broader understandings of their capabilities. *Required Equipment* is about the accessibility of hardware (cell phone, speakers,...) and technology (internet connection) necessary for using a tool and emphasizes that the less equipment is needed, the more people have access to it. *Cost of Use* assesses costs and points out that, at best, it can be freely employed or the school pays for it (Hummel et al. 2021: 299). Beyer (2021: 165) mentions ‘openness’ and minimal requirements for devices as crucial criteria as well regarding the selection of tools.

Continuing with the third category, *Technical*, the criterion *Integration/Embedding within a Learning Management System (LMS)* states it should be possible to embed or integrate the digital tool into the school’s LMS. *Desktop/Laptop Operating Systems and Browser* evaluates if learners can use the tool effectively on a desktop or laptop computer equipped with an up-to-date, standard operating system and/or browser and *Additional Downloads* addresses

the question of whether the students have to install any other software or browser plug-in to be able to use the digital tool since this would be problematic (Hummel et al. 2021: 300).

The fourth category is *Mobile design* and its first criterion, *Access*, states that students must be able to access and work with the tool, whether it is downloaded as an app or usable in the browser, on any mobile device (Hummel et al. 2021: 300). Accessibility is also a criterion enumerated by Beyer (2021: 165). *Functionality* focuses on the fact that the mobile version of the tool should not differ too much or not at all from the desktop version and that there are no differences in the functionality between different mobile versions. In addition, *Offline Access*, states that digital tools should provide an offline mode so that those learners with restricted or inconsistent connectivity can access them too (Hummel et al. 2021: 300-301).

The criterion *Sign Up/ Sign In*, listed in the category *Privacy, data protections, and rights*, underlines that in the best case, no personal information needs to be provided when using a tool. If it does, only the teacher should disclose them or, so that student data may also be collected, it must be first examined by the school to guarantee data protection. *Data Privacy and Ownership* is about gauging the tool's policies concerning intellectual property and the control of the user over the way content is distributed, whereas *Archiving, Saving, and Exporting Data* focuses on analyzing the movement of data or content between the user and the tool (Hummel et al. 2021: 301-302). Data protection and security are also viewed as important when selecting a tool by Beyer (2021: 165).

The sixth category is *Social presence*. *Collaboration* emphasizes that teachers should create learning environments and activities that give students diverse opportunities for interaction with others of their age and collaboration on tasks to create a sense of community. While *User Accountability* refers to the fact that teachers must have the possibility to control contributions from students, *Diffusion* describes that the learners' familiarity with a tool contributes to them feeling comfortable utilizing it (Hummel et al. 2021: 302).

Facilitation, a criterion of the category *Teaching presence*, indicates that digital tools providing features that help teachers to effectively participate in facilitation activities (provision of input, information, feedback, ...) are preferred. Given that the teacher can customize the way learners use the tool, it can help, according to *Customization*, to align the learning objectives intended with activities and evaluations (Hummel et al. 2021: 303). At best, it assists educators in communicating to students "why they are doing what they are doing" (Hummel et al. 2021: 303).

The last and eighth category is *Cognitive presence* and the criterion *Enhancement of Cognitive Task(s)* stresses that teachers should choose tools that redefine or alter exercises

instead of substituting one with another. *Higher-Order Thinking* is about judging a tool's ability to foster problem-solving, critical thinking and reasoning and *Metacognitive Engagement* emphasizes that digital tools that allow teachers to give formative feedback to the learners in support of their growth through learning that is self-regulated and reflective practice are favored (Hummel et al. 2021: 303).

According to Herget et al. (2021: 2), the selection of a digital tool is related to the task it should perform in the respective phase of teaching. Beyer (2021: 165) mentions 'motivational elements' as a further feature being crucial when choosing a digital tool and additionally stresses that a digital tool should not be selected based on "ich kenne da ein Tool" but in the context of an overall concept (Beyer 2021: 165).

4. Methodology

After providing the theoretical framework and some background information for the study conducted in the context of this Master's thesis in the literature review (chapters two + three), the following chapter gives an overview of the research as well as the procedure of investigation. It, first of all, presents the research interest, questions and design and then informs about the data collection method chosen for this study. Afterwards, the creation, structure and piloting of the interview guide are delineated. This is followed by a description of the interview participants, their recruitment and the interview process. Last but not least, this chapter gives information about the data transcription and analysis.

4.1. Research interest, questions and design

The present study aims to gain insight into the practices, perceived benefits and challenges as well as the solution strategies of Austrian EFL teachers regarding their use of digital devices and tools. More precisely, the goal of the investigation is to, first of all, find out which digital devices and tools EFL teachers in Austria employ in their classrooms and for what purposes they use or have their learners use them. Moreover, not only the criteria according to which they select the digital tools for their lessons should be determined, but also the way(s) they show their students how to work with them. The identification of the benefits that digital devices and tools offer for EFL teachers is a further objective of this investigation. Last but not least, the research conducted in the framework of this Master's thesis is targeted at exploring the challenges that the use of digital devices and tools entails for Austrian EFL teachers and the

strategies they have developed or the support they would need to overcome them. Based on all the goals presented, the following six research questions have been formulated:

1. Which digital devices and tools do Austrian teachers use in their EFL classrooms?
2. For what purposes do Austrian teachers employ digital devices and tools in their EFL classrooms?
3. Based on which criteria do Austrian EFL teachers select digital tools for their teaching?
4. How do Austrian EFL teachers introduce their English students to the digital tools they should use?
5. Which benefits do digital devices and tools offer according to Austrian EFL teachers?
6. Which challenges have Austrian EFL teachers already faced when integrating digital devices and tools in their EFL classrooms? How can/could they be overcome?

With the aim of examining the use of digital devices and tools by Austrian EFL teachers as well as of discovering the benefits provided, challenges faced, coping strategies found and support needed, qualitative research was conducted. Finding a clear definition for this type of research, which has existed for around a century in the social sciences (Dörnyei 2007: 35) and has been affecting applied linguistics over the last three decades (Dörnyei 2007: 37), is difficult because it possesses neither its proper theory or paradigm, nor a set of methods that is its own (Dörnyei 2007: 35; Ellis & Barkhuizen 2005: 254). Dörnyei (2007: 24) describes qualitative research as a type of research in the context of which primarily non-numerical, open-ended data is collected and usually analyzed employing non-statistical methods. Qualitative research aims to examine the “subjective opinions, experiences and feelings of individuals and [...] the participants’ views of the situation being studied” (Dörnyei 2007: 38) as well as to provide a picture of, for instance, interactions or people that are nuanced and detailed (Friedman 2011). The data that served to answer the above-mentioned, six research questions were obtained from semi-structured interviews which were conducted using an interview guide. A total of ten Austrian EFL teachers working in different schools have agreed to take part in an interview. After completing all the semi-structured interviews, they were transcribed and qualitative content analysis based on Mayring (2015, 2022a, 2022b) was carried out to analyze the data collected. The findings were eventually interpreted and discussed by, amongst others, comparing them to the results of previous studies on the use of digital devices and tools in the classroom.

In the following sections of the present chapter, the method chosen for data collection will be further described as well as the interview guide used and its construction process. Then,

this paper will provide information on the sampling and participants, the realization of the interviews and the data analysis method and procedure.

4.2. Data collection method – semi-structured interviews

In order to collect empirical data used to answer the six research questions, interviews with Austrian EFL teachers were conducted. Interviews, representing a widely employed data collection instrument (Cohen, Manion & Morrison 2011: 409) as well as the most frequently used method in qualitative research (Dörnyei 2007: 134), are “two-person conversation[s] initiated by the interviewer” (Cohen, Manion & Morrison 2011: 411) for obtaining information that is relevant for research (Cohen, Manion & Morrison 2011: 411). Prior (2018: 226) adds to that that an interview is prearranged, features predetermined participants and is usually recorded. It is a “dynamic interaction” (Prior 2018: 226) which is part of people’s everyday lives since one either participates in such a conversation as interviewer or interviewee or encounters one on the radio or television (Dörnyei 2007: 134). The usual duration of an interview ranges from 30 to 60 minutes (Dörnyei 2007: 134) and besides remaining flexible and patient, interviewers must listen actively, possess a good memory and communication skills enabling fast adaption to and sound management of unpredicted interview situations (Prior 2018: 233-234).

The type of interview selected for the present research project is the so-called guided or semi-structured interview, which represents a subtype of the genre of structured interviews (Prior 2018: 233). Despite being organized and structured, semi-structured interviews provide interviewers with flexibility and openness (Burns 2010: 75) and with the opportunity to “follow up interesting developments” (Dörnyei 2007: 136) in the course of the conversation. Additionally, as all participants are questioned on the same topics and asked the same ‘main’ questions, the comparability of the interview texts is maintained (Nohl 2012: 15). Researchers opting for this interview format must fully plan and prepare their interactions (Prior 2018: 233) (e.g. recruiting participants, determining the meeting time and place, testing the recording device(s), etc.) (Prior 2018: 234) and usually compile and pilot an interview guide before conducting the interviews (Dörnyei 2007: 136). The interview guide created for interviews is a list of open-ended questions that serves as a framework and ensures that, on the one hand, all aspects relevant to the research and answering the research questions are addressed (Mayer 2013: 37) and, on the other hand, that the interviewer and interviewee do not digress from the topic or topics under investigation (Nohl 2012: 14) (see section 4.3 for more information on interview guides). Furthermore, thorough preparation on the part of the interviewer is needed

to facilitate the moderation of the conversation from one topic or question to the next (Strübing 2018: 103).

Semi-structured interviews, or interviews in general, are labor-intensive (Prior 2018: 233) and their preparation, realization, analysis and interpretation are seen as time-consuming (Burns 2010: 74). In addition, this type of conversation is considered as open to bias and susceptible to subjectivity (Cohen, Manion & Morrison 2011: 411), which must be borne in mind when reading the chapter concerned with the discussion of the findings (see subchapter 5.2.). Lastly, a disadvantage and oftentimes point of criticism of semi-structured interviews is that the results cannot be generalized (Zierer, Speck & Moschner 2013: 74; Dörnyei 2007: 41) particularly due to the usually small sample size (Dörnyei 2007: 41).

In spite of these downsides, collecting data by conducting semi-structured interviews was considered useful for this study since they, first of all, allow researchers to obtain rich information and learn about things in more depth (Burns 2010: 75). Interviews, including semi-structured ones, represent a useful method to gain insight into the way of thinking, attitudes, knowledge and evaluation of the people taking part as interviewees in the conversation (Zierer, Speck & Moschner 2013: 63) as well as to obtain descriptions of their life world (Brinkmann 2013: 21). Besides that, the flexibility offered by semi-structured interviews, which Burns (2010: 75) mentions, and thus having the possibility to ask further, unprepared questions for, for instance, clarification or getting additional information was another decisive factor for me for the selection of semi-structured interviews as data collection method.

4.3. Interview guide – construction, description and piloting

As discussed in the previous section of this Master's thesis, semi-structured interviews were carried out in order to obtain the data allowing to answer the six research questions (see section 1. or 4.1.). With the aim of structuring the conversations with the interview partners, an interview guide is usually constructed (Kruse 2015: 209) which comprises a number of topics relevant to the study (Strübing 2018: 102) and consists of either key words, which are used for forming questions in the course of the interview(s), or fully formulated questions (Helfferich 2009: 36). However, interviewers do not have to stick to the set of questions prepared by all means, which is underlined by the phrase “[the researcher] may deviate from the guide in order to pursue topics that arise during the course of the interview” (Friedman 2011). Thus, questions can be dropped or added to, for example, clarify a response, or ordered differently than planned (Friedman 2011).

The construction of the interview guide used in this study followed the principle of “So

offen und flexibel [...] wie möglich, so strukturiert wie aufgrund des Forschungsinteresses notwendig” (Helfferich 2009: 181). Furthermore, its creation involved multiple steps which are outlined in the course of this section and illustrated with the help of Figure 1 (see page 34).

I started composing my interview guide after having found and narrowed down my topic for the master project, searched for and read literature relevant to my study (e.g. journal articles about previous studies in the field of new or digital media and the use of technology, Web 2.0 and digital tools in teaching, chapters concerned with the chosen method for gathering data and the creation of interview guides, etc.) and determined my research questions. This way of proceeding for preparing for interviews, or for all kinds of inquiries, is also recommended by Zierer, Speck and Moschner (2013: 70). Referring to the first step of the *SPSS-Verfahren* (*Sammeln, Prüfen, Sortieren* and *Subsumieren*) by Helfferich described in Helfferich (2009: 182) and Kruse (2015: 227), I started creating my interview guide by collecting questions in the context of a brainstorming phase and writing them down in a notebook. I, in addition to this, also looked at existing interview guides employed in previous studies on similar topics (e.g. Huber 2022; Schuster 2022), primarily for inspiration. A few of their questions were, however, adopted and/or adapted. Then, following the second step of the *SPSS-Verfahren* by Helfferich (2009), which is *Prüfen*, I reviewed my collection of questions several times over the course of one week and, having my research interests and aims in mind, I eliminated those that did not fit and were outside of the scope of my research. Additionally, I reformulated some of the questions I kept in order to render them more open, comprehensible, precise and shorter. Based on Kruse (2015: 227) and the third and fourth step of the *SPSS-Verfahren* by Helfferich (2009), the remaining questions were subsequently sorted by content and organized in thematic blocks. These thematic blocks or clusters were then ordered and I assigned each of them a title. Last but not least, I added an introductory section to the interview guide where I thank the interviewees for having agreed to take part in the conversation and inform them about, amongst other things, the context, topic and objectives of my study as well as about the estimated duration of our interaction. Furthermore, this part also contains an explanation of the two terms *digital devices* and *digital tools* which are important and relevant to the research topic and included in the interview guide as well as some examples (e.g. computers, tablets, smartphones, interactive whiteboard, ...). A question regarding the consent to audio record the interview and one asking whether further information or clarifications are needed were added as well. Besides this introduction to my interview, I prepared and included some prompts and probes as well as a sentence to thank my interviewee for having participated and for the insightful conversation we had.

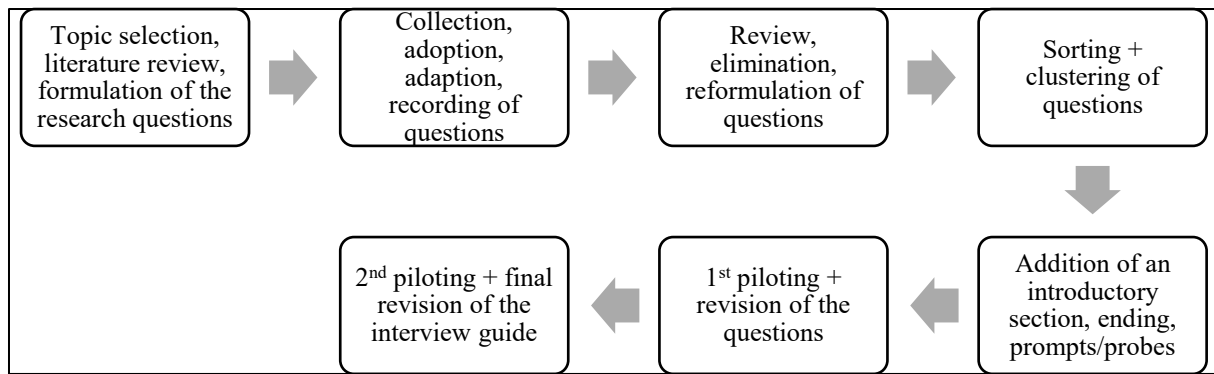


Figure 1: Construction procedure of the interview guide (self-created)

After having constructed the first draft of my interview guide following the steps outlined above, I did some piloting, or ‘pretest’ (Mayer 2013: 45). To be exact, I pretested my interview questions twice.

The first piloting or pre-test took place in the framework of a Master’s seminar at the University of Vienna which aimed to support students in planning and carrying out their Master’s thesis project. After having provided some general information on my study, each of my colleagues attending this course and the professor received half of my interview guide, a decision that was taken based on the instructor’s note that the entire presentation (which included in my case an introduction to Master thesis project, the piloting, and a ‘Questions and Answer phase’) should only last about 20-25 minutes. I also asked them to evaluate the interview questions given in accordance with in total five criteria. The first four criteria were:

- Are the questions answerable? (Kruse 2015: 216)
- Are the questions comprehensible? (Kruse 2015: 218)
- Is the wording of the questions/vocabulary used simple? (Kruse 2015: 216; Cohen, Manion & Morrison 2011: 416)
- Have ambiguity and imprecision been avoided? (Cohen, Manion & Morrison 2011: 416)

In addition to these four criteria which were based on two publications, Kruse (2015) and Cohen, Manion and Morrison (2011), I formulated a fifth one, namely “Do the interview questions elicit the data necessary to answer the research questions given at the top of your sheet?”. To be able to check whether this criterion was met, I provided my colleagues with the research questions that should be answered by the interview questions they received. The objective of this first pre-test was to determine if my questions were, amongst others, easy to understand and answerable for other people as well as formulated unambiguously and useful for answering my research questions.

After the first pre-test, I revised my interview guide in accordance with the feedback

that I received from my colleagues and professor. I dropped, reformulated and divided some of my questions into two separate ones. Afterward, I piloted the revised version of my interview guide a second time with two friends in February 2024. The second pre-test helped me, just as the first one, to examine whether my questions were clear, comprehensible and answerable. In addition, based on Burns (2010: 78), I aimed to determine the extent to which they were helpful in getting the information I needed to answer my six research questions and to increase the validity of my findings. Due to the positive feedback of my two friends, no further revision of the interview questions was undertaken and an approximate conversation duration of 45 to 60 minutes could be specified. As the list of prompts and probes I had prepared turned out to be rather distracting and annoying than helpful, I decided to remove it from the interview guide.

The interview guide that was in the end used in the two-person conversations and is enclosed in this Master's thesis (see appendix 8.1.), starts with an introduction presenting the participants my research objectives and defining two terms, *digital devices* and *digital tools*, which are important to my study and occur in the questions. It provides basic information regarding the interview (e.g. estimated duration, use of data collected) and lastly asks for the interviewee's permission to audio record the interaction as well as if any questions need to be answered in advance of the interview. The main part of the interview guide comprises in total 19 main questions divided into four thematic blocks. The first one, "Einstiegsfragen: Hintergrundinformationen zur befragten Person und Schule" consists of five questions aiming to find out more about the interviewees, their teaching context and the school they are working at. In the framework of the second cluster, "Die Nutzung digitaler Endgeräte und Werkzeuge durch EnglischlehrerInnen", which comprises nine questions, the interviewees are amongst others asked to name the digital devices and tools they employ in their English lessons and to give information on the frequency and way of as well as the purpose for using them. They should also explain to what extent they incorporate blended learning and flipped classroom in their teaching and how they select digital tools and introduce them to their students. Thus, these questions were aimed to answer my first four research questions. The third thematic block, "Potenziale, Nachteile und Herausforderungen im Zusammenhang mit digitalen Endgeräten und Werkzeugen", consists of three items that should help obtain data for my fifth and sixth research questions as they are concerned with the benefits and downsides of using digital devices and tools in English language teaching and the challenges faced by the teachers as well as their strategies to solve them. At the end of the interview and as part of the last thematic block, "Abschlussfragen", the interviewees are asked to provide some advice for beginners regarding the integration of digital devices and tools in their teaching of English and are given

the opportunity to add information, make some final notes or clarify something. Besides an introductory section and the 19 main interview questions, the interview guide also contained an illustration of the two important terms, *digital devices* and *digital tools*.

4.4. Participants and data collection procedure

To gather data for my Master's thesis, semi-structured interviews were conducted. For these interviews, I was looking for English teachers who work at an Austrian secondary school (middle school, *BHS* or *AHS*) and use digital devices and tools in their EFL classrooms. In order to find suitable interview partners, I first asked friends and people in my (social) environment whether they knew anyone who belonged to my target group. Unfortunately, this was without success. I then formulated an interview request message with the most important information (e.g. context, target group, my contact details) and posted it in a *WhatsApp* group whose members are English Master of Education students, in chat groups on *Studo* and in university-related groups on *Facebook*. It was also circulated among course participants by my supervisor. Last but not least, I also wrote to two former course colleagues and asked if they would take part in an interview. As a result of the interview request, some people contacted me personally via email or a message on *WhatsApp* and I ended up conducting a total of ten interviews. As displayed in more detail in Table 1, the ten interviewees were English teachers having different second subjects (e.g. Computer science/Digital literacy, Psychology and Philosophy, History, Geography and Economics, Spanish and *DAF*) and working in diverse school types including *AHS*, middle school and *HTL*. Moreover, the number of years of employment varied between almost one and seven years. The schools the teachers worked at are located in Vienna, Lower Austria or Upper Austria. Finally, as can be seen in the column on the far right of Table 1, the ten interviewees teach pupils of various school grades in English.

	Subjects	Duration of teaching activity	School type	School location	Grades taught in English
Teacher 1	English + Computer science/Digital literacy (<i>digitale Grundbildung</i>)	1 st year - 6-7 months	AHS	Vienna	3 rd grade
Teacher 2	English + Psychology and Philosophy	2 nd year – 1 ½ years	AHS	Lower Austria	2 nd , 6 th , 7 th + 8 th grade
Teacher 3	English + History Optional subject: “Cambridge” (preparation for the	7 th year – 6 ½ years	HTL	Lower Austria	1 st grade-5 th grade

	Cambridge Certificate)				
Teacher 4	English, Spanish + <i>DaF</i>	1 year at middle school; <i>DaF</i> for several years	Middle school	Vienna	2 nd grade + two 3 rd grades
Teacher 5	English + Geography	5 th year	Middle school	Vienna	2 nd , 3 rd + 4 th grade
Teacher 6	English + GW (Geography and Economics)	1 st year	AHS	Lower Austria	1 st + 2 nd grade
Teacher 7	English + History	1 st year	AHS	Vienna	1 st + two 3 rd grades
Teacher 8	English + History	1 st year (continuously); substitute positions of varying duration	AHS	Upper Austria	2 nd , 5 th + 6 th grade
Teacher 9	English, Geography, Digital literacy (<i>digitale Grundbildung</i>) + Social learning	3+ years	Middle school	Vienna	Two 1 st + two 2 nd grades
Teacher 10	English, Psychology and Philosophy, Digital literacy (<i>digitale Grundbildung</i>) + Career orientation (<i>Berufsorientierung</i>)	2 nd year	Middle school	Vienna	3 rd + two 4 th grades

Table 1: Background information on the interview participants

The date and time of the interviews, their form (offline/online) and the location or tool used were arranged via email or *WhatsApp* communication. In addition, the interview participants received the interview questions in advance so that they had the opportunity to have an overview of the exact content of the conversation. The ten semi-structured interviews took place over the course of March and the first week of April 2024. While one interview was held face to face at the English department in Vienna, the remaining nine were conducted online via *Zoom* and *WhatsApp* video call. At the beginning of each conversation, I ensured that the topic of the conversation, the context in which it was taking place and the meaning of the two terms *digitales Endgerät* and *digitales Werkzeug* were clear to the person interviewed. Furthermore, I informed them that they could ask questions as well as for a break at any time and asked whether they wanted to know anything or if anything was still unclear before the start of the interview. All ten semi-structured interviews were recorded after having been given permission and I also

took notes with the main aim of being able to ask further, concrete questions. The duration of the conversations varied between 50 and 100 minutes with pauses being excluded. Furthermore, they were held in German. All in all, the ten semi-structured interviews went smoothly and allowed me to collect a huge amount of data for my research project.

4.5. Data analysis – transcription and coding

With the aim of being able to examine and analyze the qualitative data obtained, it must first be prepared. In the context of this research project, this involves the transcription of the ten semi-structured interviews. Transcription is defined as the transformation of audio- or video-recorded data into written documents (Friedman 2011) or a “Abschrift der Audiodaten nach bestimmten Regeln” (Strübing 2018: 117). These rules and a decision on how detailed the transcriptions should be (Révész 2011) and what should be included (Friedman 2011) had to be made before the recordings were written down in textual form. Since I am interested in what the interview participants say, instead of how they express themselves, I in the end opted for the so-called ‘broad transcription’ that entails little detail according to Révész (2011) and to polish the language used by the interviewees and me, the interviewer, to a certain extent. This means that, after using *Microsoft Word* or *Riverside* (n.d.) to get an initial transcription of each conversation, I checked if every word had been included, completed it and corrected any mistakes. Based on Dresing and Pehl (2018: 21) I then transformed all expressions in dialect into standard language (*Hochdeutsch*) if possible. In addition, contracted words such as “*hamma*” or “[s]o ‘n Buch” have been changed into “*haben wir*” or “*so ein Buch*” (Dresing & Pehl 2018: 21). Non-verbal features such as gestures and eye gaze (Friedman 2011) were not described in the transcripts. I also excluded imperfect speech like hesitation markers as well as pauses (Friedmann 2011) and only transcribed from the first interview question onwards. Incomprehensible words or passages were indicated by (*unv.*) (Dresing & Pehl 2018: 21-22). Following Dresing and Pehl (2018: 21), the syntax of the sentences has been retained even if it contained errors. I opted to remove the exact address of the schools (e.g. street, house number), if mentioned by the interviewees, from the transcripts to ensure anonymity as well as information that was considered sensitive. Furthermore, I marked interview breaks with [...]. A line was always left blank between the contributions of the individual speakers and the statements have been assigned either an ‘I’ (*InterviewerIn* – interviewer in English) or a ‘B’ (*befragte Person* – person interviewed/interviewee in English) (Dresing & Pehl 2018: 22).

After having transcribed and thus prepared the data collected by conducting semi-structured interviews, qualitative content analysis referring to Mayring (2015, 2022a, 2022b)

was performed. This type of analysis is defined as a “method for systematically describing the meaning of qualitative data” (Schreier 2014: 170) that is governed by predetermined rules (Mayring 2015: 50). At the center of qualitative content analysis are texts such as answers to open-ended questions of standardized inquiries, observation protocols or newspaper articles (Mayring & Fenzl 2019: 633). Since Mayring and Fenzl (2019: 633) state that qualitative content analysis is also chosen for analyzing interview transcripts, this method has been considered useful for the present Master’s thesis project working with this specific type of text.

Mayring (2022a: 61) proposes a general content analysis process model on which the following, first steps in my analysis procedure were based. The first step is determining the material or data to be examined, which were in my case the transcripts of the ten interviews I had conducted with Austrian EFL teachers. Then, the situation in which the material was created (e.g. target group and participants of the interviews, type of interview, the interview procedure, ...) and its formal characteristics (e.g. form of the material, transcription rules) should be described (Mayring 2022a: 53-57). All the information originating from this process has been presented in the previous sections. According to Mayring (2022a: 57), the research should then determine the direction of the analysis and a specific question or problem. In my case, this is reflected in my research interests and questions outlined at the beginning of this chapter.

Referring to the following step in the general content analysis process model by Mayring (2022a: 61), I selected an analysis technique. Mayring (2022a: 66) mentions in total three different techniques for analysis, namely *summary* (*Zusammenfassung*), *explication* (*Explikation*) and *structuring* (*Strukturierung*). While the *summary* aims to reduce the material, or data, to the most important information, the *explication* is intended to provide additional material to help understand and clarify unclear text passages. The objective of *structuring*, which represents the analysis technique chosen for this study, is amongst others, to filter out specific aspects of the material (Mayring 2022a: 66-67) or assess it using pre-determined criteria (Mayring 2022b). Mayring (2022b) calls this latter technique also *categorization*. The three analysis techniques presented can also be combined (Mayring 2022a: 66-67).

With the aim of being able to structure and categorize the material, in my case the interview transcripts, categories, being analytical aspects (Mayring & Fenzl 2019: 634), were developed. The creation of the categories had to be done after selecting an analysis technique (Mayring 2022a: 61). Categories can be generated in a concept-driven or data-driven way (Schreier 2014: 176) or, in other terms, deductively or inductively (Kuckartz 2019: 184). Whereas creating categories in a concept-driven way means that categories are based on everyday knowledge, prior research or the interview guide (Schreier 2014: 176), establishing

categories in a data-driven way describes the developing of categories by examining one's material (Schreier 2014: 176). For the analysis of the data collected in the framework of and for this Master's thesis project, categories and subcategories have been generated in a concept-driven way, using the questions in the interview guide as a basis. This deductive way of developing the categories is also typical of the *structuring* technique (Mayring 2022a: 67; Mayring 2022b). The categories and subcategories have been given names or labels (e.g. "Background information on the interviewee, teaching context and school", "Digital devices and tools used", "Frequency of using digital devices and tools and possible differences", "Way(s) and purpose(s) of using and integrating digital devices and tools in English language teaching", ...) (see appendix 8.2.).

Subsequent to the development of my categories and subcategories, I built a coding frame (see appendix 8.2.). This coding frame, being at the heart of qualitative content analysis (Schreier 2014: 174) and also called coding guideline (Mayring 2022b) or codebook as by Creswell and Creswell (2017), consists of the categories generated, their definitions, text passages taken from the transcripts and representing anchor examples of the categories, and coding rules (Mayring & Fenzl 2019: 638; Mayring 2022b). Based on Mayring (2022b), I created a table with four columns, one for each of the four, above-mentioned features. I then formulated a definition for each category and subcategory and added it to the coding frame. This short definition describes what is meant by the (sub)category as well as of what is characteristic of it (Schreier 2014: 176). The coding frame also provides examples that aim to illustrate the (sub)categories and render their definition more comprehensible (Schreier 2014: 176-177). I afterwards established so-called coding rules (Mayring and Fenzl 2019: 638; Mayring 2022b), or also named decision rules (Schreier 2014: 177), for all my (sub)categories to specify what information from the interviews can be included or must be excluded (Schreier 2014: 176-177) and to thus facilitate the assignment of text passages to categories (Mayring 2022a: 96).

Before I started coding my data, I, based on Mayring (2022a: 61), defined my three analytical units being the coding, context and evaluation unit (*Kodiereinheit*, *Kontexteinheit*, *Auswertungseinheit*) (Mayring 2022a: 60). For my analysis, a coding unit, saying what the smallest part of the material open to interpretation and the tiniest piece of text is that can be categorized (Mayring 2022a: 60), is one word. In contrast to this, the context unit, defining the largest segment of text that can be assigned a category (Mayring 2022a: 60), constitutes a paragraph. One entire interview transcript represents an evaluation unit in my research and thus the textual pieces that are coded (Mayring 2022a: 60).

Following Mayring (2022b), I then selected some test extracts from my material, namely two interview transcripts, and coded them using my coding frame. Coding describes the “translation of question responses and respondent information to specific categories for the purpose of analysis” (Cohen, Manion & Morrison 2011: 428). So, when coding, raw data is organized and classified into categories, which have in my case already been created, in order to be further analyzed and interpreted (Révész 2011). I printed the two interview transcripts and, as recommended by Kuckartz and Rädiker (2022: 134), investigated each of them line-by-line during the first trial coding process. In addition, following Mayring (2022b), I highlighted text passages that fit into any of my (sub)categories in the color that I had assigned to the (sub)category in question in advance. I also chose some anchor examples for my categories and subcategories from the two transcripts and added them to the coding frame. This trial run-through aimed to examine if my deductively developed (sub)categories work and my definitions and coding rules are clear, precise and strict enough to render successful coding possible. Based on my findings, the definition of and coding rules for some categories were reformulated.

After the trial coding and revision of my coding frame, I coded all my interview transcripts using the same technique as with the test abstracts (e.g. highlighting relevant text passages in different colors). Every text segment or sentence that could not be put into a (sub)category and thus was irrelevant to my analysis has been left uncoded. The results of the coding are presented in the following chapter of this Master’s thesis.

5. Results and discussion

5.1. Results

The following chapter presents the data collected by conducting semi-structured interviews with ten Austrian EFL teachers. It has been organized into three sections and focuses on those findings pertinent to answering the six research questions (see 1. or subchapter 4.1.). Furthermore, it is always indicated in brackets which teacher(s) provided the information presented (e.g. T1 = teacher 1).

5.1.1. Austrian teachers’ use of digital devices and tools in the EFL classroom

The first research question that the present study aimed to answer is about the digital devices and tools Austrian teachers employ in their EFL classrooms. Based on the results of the ten

semi-structured interviews the instructors interrogated use a (desktop) PC (T2, T3, T8, T10), laptop (T1, T4, T7, T9), tablet (T2, T5, T6, T8, T10), their smartphone (T1, T2, T3, T9), a smartboard (T1, T10) or interactive whiteboard (T4), the projector (T3, T4, T5, T6, T7, T9), *ELMO* representing a projector or document camera (T3) and an Apple TV (T8) when teaching English (see Table 2). They also integrate a vast variety of digital tools into their English lessons which are listed in their entirety in Table 2. The software, applications, platforms, programs and online or offline resources the teachers access via a digital device comprise *digi4school* (T1, T4, T5 T6, T7, T8, T9, T10), the *HELBLING e-zone* (T1, T2, T5, T6, T7, T8, T9, T10), *Kahoot!* (T1, T2, T3, T4. T5, T6, T7, T8, T9, T10), *YouTube* (T1, T2, T3, T4, T6, T7, T8, T9, T10), *Teams* (T1, T2, T3, T4, T5, T6, T7, T9, T10), *Mentimeter* (T2, T3, T5, T6, T8), *Padlet* (T2, T4, T7, T8), *Canva* (T2, T4, T8), *Quizlet* (T2, T4, T5, T10), *LearningApps* (T5), *Edpuzzle* (T5), *OneNote* (T5, T6, T10), *WebUntis* (T3, T6, T7, T8) and *British Council* (T5, T6, T8).

Digital devices		
Smartboard (T1, T10)	(Desktop) PC (T2, T3, T8, T10)	Tablet/iPad (T2, T5, T6, T8, T10)
Interactive whiteboard (T4)	Laptop (T1, T4, T7, T9)	Smartphone (T1, T2, T3, T9)
ELMO projector (document camera) (T3)	Projector (T3, T4, T5, T6, T7, T9)	Apple TV (T8)
Digital tools		
Digi4school/digital version of MORE! (T1, T4, T5 T6, T7, T8, T9, T10)	HELBLING e-zone (T1, T2, T5, T6, T7, T8, T9, T10),	Kahoot! (T1, T2, T3, T4. T5, T6, T7, T8, T9, T10)
More! Media app (T5, T7, T8)	BBC English (T2)	PowerPoint (T1, T2, T5, T8)
YouTube (T1, T2, T3, T4, T6, T7, T8, T9, T10)	Teams (T1, T2, T3, T4, T5, T6, T7, T9, T10)	Mentimeter (T2, T3, T5, T6, T8)
iDoceo (T5)	SharePoint (T3)	OneDrive (T3)
Forms (T5, T9)	OneNote (T5, T6, T10)	WebUntis (T3, T6, T7, T8)
Quizlet (T2, T4, T5, T10)	Padlet (T2, T4, T7, T8)	Canva (T2, T4, T8)
Tedtalks (T2, T3)	TikTok (T2)	LearningApps (T5)
Edpuzzle (T5)	ChatGPT (T2, T3, T4)	Group generator (T2)
LearningSnacks (T6)	Excalidraw (T2)	Chatterbox (T5)
Sock Puppets (T5)	Keynote (T5)	AirDrop (T10)
360.visitlondon.com (T1)	Aufgabenpool.at (T2)	Matura.gv.at (T3)
Quillbot (T1)	British Council (T5, T6, T8)	Amazon Prime (T2)
Whiteboard app by Windows (T9)	Digital dictionaries (Leo, Pons, Cambridge Dictionary, Merriam Webster, dict.cc) (T2, T3)	Instagram post generator (T2)
Schoolfox (T7)	Disney+ (T7)	Netflix (T7)
English-grammar.at (T7)	Eduvidual (T8)	ESL games (T9)
Skribbl (T9)	Excel (T9)	Word (T9, T10)
Ö24 (T2)	Scook (T10)	Google Maps (T10)

Vision (T10)	Photo app on iPad (T10)	Veritas Mediathek (T10)
Google (T10)	DeepL (T10)	BBC (T6)

Table 2: Digital devices and tools used by the Austrian EFL teachers interviewed

Aside from listing the digital devices and tools they utilize in their EFL classrooms, the ten Austrian teachers were also asked to elaborate on how and for what they integrate them. In what follows, the data collected regarding the purposes of employing laptops, smartboards, *Kahoot!*, *YouTube* and the like and thus to the second research question will be presented.

Commencing with the digital devices, a (desktop) PC is employed to, for example, play YouTube videos, upload or open handouts (T3) or the exam when practicing (T8), take notes while doing a brainstorming activity (T3) and to access the solutions to exercises as well as when doing listening activities (T8). T10 turns on the (desktop) PC whenever she has opened her lesson plan on the iPad and needs another tool like *Word*. It thus serves her as a second screen. Another digital device one can find in the EFL classroom is the laptop. It is utilized to go to the Internet (T1), to access digital tools (T1, T4, T7, T9) and different teacher books and solutions to tasks (T7), to play audios or videos (T4, T7), open files/documents (T4, T9), enter in *WebUntis* being the administration program of the school (T7) and to write texts (T9). Similarly to this, tablets or iPads are integrated into ELT to play audios, open files (T5) or access materials and tools (T6, T8, T10) such as YouTube videos (T8), be able to see the notes prepared while having the students write, for instance, a grammar exercise down in their exercise books (T6), write a text together in class (T10), enter grades (T5), report who has done the homework (T5, T8) and how well (T5) and who is sick (T8) and to check who still needs to do a ‘Show what you know’ (T8). T5 also writes on her iPad instead of on the blackboard. Austrian EFL teachers use their smartphones for organizational purposes (T1) such as checking attendance (T3)/recording absences in the digital class register (T2) and entering homework assignments, as well as, for opening a dictionary app (T3) or playing audios (T9). While T8 turns on the Apple TV to render the materials opened on a digital device visible to the students, T3, T4, T5, T6, T7 and T9 make use of the projector for this. More precisely, the projector is employed to show videos from the schoolbook (T4), to share the screen of the tablet/iPad or laptop (T5, T6, T7) when comparing or correcting homework (T5) and to allow the students to see the page of the textbook (T5) or materials, in general, and read along (T9). T3 also shows documents to her learners via *ELMO*. Another digital device used for sharing the screen of the iPad and thus rendering visible what is done on it to the learners (T10), displaying the digital version of the textbook, taking notes, completing interactive activities and comparing (T1) is the smartboard. T4 incorporates the interactive whiteboard provided at her school in her EFL lessons for

showing movies.

In addition to digital devices, the ten Austrian English teachers integrate numerous programs, platforms, apps and websites into their classrooms (see Table 2). The aim of the following part of this subchapter is to outline for which purposes they are used.

To begin with, the teachers have mentioned several digital tools that provide them access to the electronic version of schoolbooks and contained or additional teaching/learning materials. One of them is *digi4school*, which is employed to retrieve the digital coursebook (T1, T4, T5, T6, T7, T8, T9, T10), project the pages to allow the students to watch along (T5, T7, T8, T9) and let them know which activity is done (T7, T10), complete exercises together in class (T1, T8, T9), show learners the solutions to tasks (T1) and compare and discuss them (T9), play audios, videos (T4, T7, T9) or songs (T7) and to access “Bonusinhalte” (T7) or supplementary exercises (T9). In addition, T9 assigns tasks to her second graders in *digi4school* that should be done as homework or for general practice. *Scook* is a similar tool and is used by T10 to access the digital textbook, show the learners what task they are working on and provide them with the solutions to exercises. A platform that was named in almost every interview is the *HELBLING e-zone*. The teachers integrate it into their EFL classrooms for cyber homework (T1, T2, T5, T6, T7, T8, T9, T10), preparing their students for the exam (T2, T5, T6, T7, T10), having the learners train autonomously (T7) or when the teacher is away sick (T7) and practicing grammar (T6, T9) by, for example, playing games about the past simple tense (T9). It is moreover employed to practice reading, writing and listening (T6, T7). Audios for listening comprehension tasks are accessed via the *Veritas Mediathek* (T10) or the *More! Media app* (T5, T7), as well.

To promote listening skills, the teachers use *BBC English* (T2) or *BBC* (T6), *British Council* (T5, T8) and former Matura tasks from the websites *Aufgabenpool.at* (T2) or *Matura.gv.at* (T3). Whereas T2 states that she watched Barbie with her eighth grade in the context of gender discrimination, emancipation and feminism via *Amazon Prime* and this way practiced listening, T6 mentions *Disney+* and *Netflix* as tools for showing movies. *Tedtalks* are employed in the EFL classroom to develop listening skills (T2, T3) and provide input (T3). The teachers access *YouTube* to practice listening (T1, T2, T3, T4, T5, T6, T8) and have the learners get input (T1, T3, T5, T8, T10) as well, and to play music videos (T1)/songs (T7, T9), do some “PowerPoint Karaoke” for carnival or Christmas (T7), watch film trailers when selecting a movie (T7) or dialogues when training this type of discourse (T5), expose the learners to authentic language (T3), strengthen their passive vocabulary (T8), render the content of the schoolbook unit more comprehensible (T4), teach grammar (T6, T9, T10), foster intercultural

competences (T6) and initiate a discussion based on the input given (T10).

Besides listening, *British Council* is used to practice reading skills (T6, T8). T2 reports that she once asked her students to access an article on *Ö24* which they had to read and then discuss critically. When teaching first graders, T5 integrates *Chatterbox* and *Sock Puppets* into her classroom to have her students practice speaking. T2 allowed her learners to use *TikTok* to create TikTok videos about English pronunciation.

Several digital tools have been named in the interviews regarding vocabulary and grammar. First of all, digital dictionaries are opened so that words can be looked up (T2, T3). To practice and/or review vocabulary, tools such as *ESL games*, *Skribbl* (T9), *LearningApps* (T5) and *Quizlet* (T2, T4, T5, T10) are incorporated. *Kahoot!* has been mentioned in connection with the checking of vocabulary (T2, T5, T8, T9) or the learners' understanding of a grammar topic (T1, T2, T5, T8, T9), revision of grammar (T1, T2, T3, T4, T7) or vocabulary (T2, T4, T6, T7, T10), the practice of these two (T8) and collection of words (T6). Additionally, *LearningApps* is used to practice grammar (T5) and *LearningSnacks* to review grammar or content (T6). T7 integrates websites such as *English-grammar.at* to practice grammar and vocabulary in her EFL classrooms. *Quizlet*, *LearningApps* and *Kahoot!* should serve the purpose that students have fun, too (T5), and the latter is also used as a reward (T1, T5) or to loosen up the lesson (T7).

The teachers have listed numerous digital tools they open for organizational or administrative purposes. Whereas *iDoceo* is employed for calculating grades (T5), *Vision* is utilized to record absences (T10). T9 accesses *Excel* for the latter purpose and for writing down the homework. *WebUntis* serving as a digital class register based on T3 and T8, is employed to check attendance (T3) and record absences (T6, T7, T8), the homework (T3, T6, T7), check-ups (T7), the teaching material (T6, T7, T8) and that the subject matter of the exam has been announced (T8).

Furthermore, various digital tools could be identified that serve, amongst others, the communication and sharing of materials. The first one is *Teams* which is used by the teachers interviewed to provide students with all worksheets (T1, T9), additional practice materials (T1)/exercises (T2, T7), handouts (T3), solutions (T1, T2, T7, T10), written notes (T10), training packages for the exam (T6), the subject matter of the exam (T1, T6, T7), a list of the stations when doing "Stationenbetrieb" (T5), pictures taken of the blackboard and the text written on it (T4) and links to other tools such as *Padlet* (T4) or online tasks (T7). It is also employed to communicate with learners outside of the classroom (T1, T2, T5), send out reminders (T1, T7) regarding, for instance, the upcoming test (T7) or other important

information (T7), give homework (T1, T3, T5, T9, T10) or work assignments when not being at school (T3) and for feedback (T2). T2 mentions that she sometimes has her pupils upload something they have found like a TikTok video on the word order of adjectives to *Teams*, T6 once asked her first graders to hand in a recording of a speaking task on this platform and T10 has her learners send her texts via this digital tool. In addition to *Teams*, T7 shares the subject matter of the exams via *Schoolfox*. In contrast to all other participants, T8 uploads tasks, materials, the subject matter of the exams and links to tools to *Eduvidual* and tells her students from time to time to submit their homework there. Materials are shared with the learners using *AirDrop* (T10), *SharePoint* or *OneDrive* (T3). The latter two tools are incorporated when filling out lists for, for example, the native speaker week, too (T3). T5, T6 and T10 employ *OneNote* to share exercises (T5) or texts the pupils should memorize (T5), record homework assignments (T5), communicate and collaborate with the team-teaching partner (T5) and prepare grammar exercises opened during class (T6) or when planning lessons (T10) and for accessing the plan of the year (T5).

The teachers have also enumerated apps, platforms, programs and the like which they implement for multiple, distinct purposes. *Mentimeter* is made use of to conduct surveys (T2, T3, T5) or polls (T8) and to collect or review vocabulary (T6) as well as when doing brainstorming activities (T3) or as a topic introduction (“Also es ist zum Beispiel in der Fünften gegangen um food und zum Themeneinstieg Mentimeter ‘Tell me what’s your favorite food’, ‘What do you enjoy eating?’”) (T8). Another digital tool is *Padlet* which was mentioned in connection with, for instance, the teaching of vocabulary, brainstorming, the promotion of productive skills by creating a fact file of an animal (T4) and the provision of additional materials such as worksheets for the test or of links to explanatory videos (T7). It represents a place where students upload their work, like a profile of a person from their area who is their personal hero or heroine or self-created cooking videos and make it accessible to their classmates (T8). *Canva* is integrated to have the students create flyers (T2), compile a template for a leaflet that learners could edit or a document featuring strategies, tips and phrases for individual long turns (T8), teach vocabulary and grammar and render units more comprehensible as well as for presentations and quizzes (T4). *Forms* serves the purpose of checking vocabulary and grammar (T9), carrying out surveys, creating/hosting quizzes, formulating questions the pupils have to answer when listening to an audio text and seeing how many of them they got correct and which ones posed difficulties (T5).

Last but not least, digital tools like *Excalidraw*, *Edpuzzle*, *Word* and *Co* are discussed. The first of these, *Excalidraw*, is employed by T2 to create mind maps. She also uses a *group*

generator to set up groups, an *Instagram post generator* so that her learners can generate Instagram postings and *ChatGPT* to produce texts such as a report that the students should correct. The goal of this latter task was to show the pupils that *ChatGPT* does not write texts the way they are required to (T2). Moreover, T2 allowed her eighth graders to use this tool to answer questions given for a conference on globalization that they held in class. *ChatGPT* has also been named related to creating grammar tasks (T3) or gap-filling exercises (T4). *Edpuzzle* has been named in the context of creating tasks and embedding questions into videos that the learners need to answer while watching which allows the teacher to check if they viewed it in full (T5). T5 utilizes *Keynote* and *PowerPoint* for presentations and T8 integrates *PowerPoint* (presentations) as a substitute for the blackboard and to guide through the lesson by providing an introduction to the topic, the aim(s) of the lesson and instructions to tasks (“Compare and contrast these pictures”) on the slides. Whereas T10 incorporates *DeepL* in her lessons to familiarize the students with this tool so they can use it while writing texts, T1 accesses *360visitlondon.at* to make an interactive city tour of London and T10 opens the photo app on her iPad to edit images or screenshots. With the aim of rendering the explanation of words easier, pictures are shown via *Google* (T10). *Google Maps* is used to provide the pupils with an idea of where the different places occurring in the texts read are located (T10) and the whiteboard app by Windows functions as a blackboard on which information is written down and it is incorporated for brainstorming activities (T9). *Word* is listed for drafting longer texts (T9) and composing example texts together (T10) and *Quillbot* represents a digital tool implemented to support the students in formulating good English sentences when producing written works in class (T1).

5.1.2. Austrian EFL teachers’ selection and introduction of digital tools

Apart from examining which digital devices and tools Austrian EFL teachers employ in their classrooms and for which purposes, the study at hand also aimed to determine the criteria based on which they choose apps, platforms, programs and co and the way(s) they introduce them to their pupils. The following section presents the answers to research questions three and four.

Regarding the selection of a digital tool, almost all teachers interviewed stress the importance of it being free (T2, T3, T4, T5, T6, T7, T10). T8 and T10 point out that they use a fee-based tool only if the school covers the fees (T8, T10). T8, however, adds that she does not feel that it is necessary to pay for a digital tool since the most important things are freely accessible. For T9 costs are, in general, no exclusion criterion but she still prefers tools that are not fee-based. Students should not be required to create an account in order to be able to work

with a digital tool (T1, T2, T3, T6, T7, T10) and disclose any personal data (T1, T2). T10 also mentions that if they had to sign up, she would need to ask their parents to give their consent. Digital tools must be ad-free (T6) as well as reliable (T4) and T5 prefers those that can be accessed by scanning a code. Further selection criteria are related to the design of digital tools. Several teachers, first of all, underline that the apps, platforms, programs and more have to be user-friendly (T2, T4, T6, T7, T8, T9). Furthermore, they should be well-structured (T5), clearly laid out (T5, T8), graphically well-designed (T4) or attractively designed (T6) and easy to understand (T5, T7). When choosing a digital tool, T1 makes sure it works on all devices and T8 checks if there is a legal notice showing that it is a legitimate tool. For T8 it is also important that the students receive clear instructions from the tool or that the teacher has the opportunity to add some. A digital tool must suit the subject discussed, the level of the students (T7) and their needs (T4). Another factor considered in the selection is whether or not a tool allows the teacher to see which students have practiced and what mistakes they have made, as is the case with the *HELBLING e-zone* (T1) or, as T5 puts it, to determine if they have done a certain task and how well. In the interviews, autocorrection and the provision of feedback are also named as criteria by T1 and T7. Moreover, digital tools that either offer prefabricated tasks or for the use of which there are already ideas to be found on the internet are preferred (T10). T6 thinks it is vital that the exercises provided on a platform or website or in an app should be short and take only five to ten minutes. The teacher's familiarity with the tool (T2) or that of the students (T1) is another criterion. Lastly, the question of whether a digital tool is from the textbook publisher and therefore corresponds to its content (T1), recommended by the ministry or the federal government (T3) or considered useful by friends or teacher colleagues (T2) plays a key role in the choice, as well.

Besides naming the criteria based on which they select digital tools, the ten teachers were also asked to outline the way they introduce their learners to them. The analysis of the interviewees' responses revealed that one way to introduce the learners to new tools is to illustrate how to access and/or use them (T1, T2, T4, T5, T6, T7, T8, T9, T10). During this 'demonstration phase', the learners either have to listen and watch (T1, T2, T4, T8, T9, T10) or do what the teacher does (T5, T6, T7). T9 also states that she and her team-teaching colleague sometimes have one of their students show how a tool works under their guidance. After the demonstration, the students are allowed to try the digital tool out and work with it (T1, T4, T8, T9, T10) and the teachers are available for help and act as supporters (T6, T8, T9, T10). Besides illustrating, T2 once shared a guide on how to use the tool with her learners, which she had to create for a seminar.

Another way of introducing the learners to new apps, platforms and co. is to only explain to them orally how to access and/or use them without demonstrating the individual steps or functions (T3, T6, T8). T3 adds that while giving instructions, she additionally goes through the rows and T7 reports that, regarding the first integration of *Kahoot!* into her EFL classroom, she asked one of the learners, who was already familiar with this tool, to explain how to apply it to his/her classmates.

Moreover, some interviewees do not explicitly introduce their students to all digital tools but rather have the learners familiarize themselves with them. T5 mentions that she also lets her learners utilize or try out a tool right away and helps them if they have problems. Similarly to this, T6 states that she has her second-grade students discover tools and try things out which allows her to see what they can do and where their limits are. T2 explains, as well, that with *Excalidraw*, for example, she permitted the students to work with it right away and generally had them learn how to use it by using it (“Learning by doing einfach” (T2)).

5.1.3. Benefits of using digital devices and tools in ELT according to Austrian EFL teachers, challenges met and their solutions

Having presented the digital devices and tools the ten Austrian teachers interviewed use in their EFL classrooms, the purposes for which they employ them as well as their selection criteria for and way of introducing apps, platforms, programs and co., the following section first of all outlines the benefits of integrating digital technology in teaching (see RQ5 in section 4.1.) and then discusses the challenges the interviewees have encountered so far and their solution strategies (see RQ6 in section 4.1.).

To begin with, incorporating digital devices and tools in ELT leads, according to the teachers, to the students having more fun (T1), increases their motivation (T1, T3, T7, T9) and interest (T2) and brings them joy (T6). T10 also reports that the learners are more mentally challenged, involved and motivated to try things out. Using laptops, apps, and co. helps teachers to render the content clearer and easier to grasp (T4, T10) and make the lessons more exciting (T4, T5, T10). By using digital devices and tools students are rewarded for good work (T5). T6 and T7 also state that everything is simply more playful and T1 underlines that her students feel far less pressure when using *Kahoot!* for reviews than when taking a regular test. Further benefits of using digital devices and tools in the lesson are that the students learn how to handle hardware (T6, T7) and that proximity to their everyday lives can be created (T2). A range of materials and input is available (T8) and, in particular, authentic language can be accessed through, for instance, *YouTube* (T3, T5, T8). The students can also be familiarized with

different dialects by means of podcasts (T8).

The teachers, furthermore, listed numerous benefits related to accessibility. Materials and documents can be accessed regardless of location (T3, T9, T10) and on any device (T10). Students no longer have to write down the homework and when assessments (check-ups or tests) take place as they can find everything in the digital class register from anywhere. They also have the possibility to check what was done in the previous lesson at any time because everything like the PowerPoint presentations can be found on *Eduvidual*, for example (T8).

Digital devices and tools also facilitate everyday school life, teaching and learning. Especially artificial intelligence makes things much easier for teachers (T2, T7) and saves time (T2). Since a program like the *HELBLING e-zone* evaluates exercises and automatically gives the students feedback, the teachers' workload is reduced (T7). Other benefits are that one does not have to carry around so many things as, at best, one has everything on the iPad, for example, and that teachers save time by not having to print out materials and wait in line at the printer, which, as a side effect, also lowers copying costs and allows educators to work more sustainably (T8). T8 also thinks that communication is facilitated and more effective because she uploads everything important to the platform (*Eduvidual*) where the students can see it and no longer have to contact her. Adding to this, T1 speaks of documentability because she can always see whether she has written something on *Teams* as well as what she has recorded and states that students can look things up there and know where to find information and what they need. Digital tools such as the *HELBLING e-zone*, allow teachers to see which students have been practicing and determine, for instance, whether the grade on the exam was purely a slip-up (T1) or what the students can do, where they have problems (T5, T6) and what still needs to be reviewed (T5). T6 stresses that with *Mentimeter*, for instance, she can have the learners enter vocabulary simultaneously and does not have to ask each one separately to name words. *Quillbot* and other software provide support when writing texts (T1) and many programs guide learners through the tasks which means that they need less help from the instructor and can work more independently (T10). Learners can do exercises at home at any time and repeatedly (T7). This means that, for example, students who have difficulties with listening tasks can listen to audio on their own, at their place and even several times (T5). Moreover, the smartboard permits saving notes taken in the lesson as a PDF and rendering them available to the learners (T1). Using digital devices and tools brings variety to the methodology (T3), makes a different form of teaching take place (T6) and gives teachers and students the chance to escape from the 'book, blackboard, book, blackboard, cloze texts...' routine (T4). They facilitate differentiation (T5), meeting the students' needs (T2) and open up various opportunities to reinforce

productive skills and thus apply what has been learned (T4).

When examining the challenges the ten Austrian EFL teachers have met so far while incorporating digital devices and tools in their classrooms, it becomes evident that most of the difficulties are due to poor technical infrastructure. The teachers reveal that the digital devices (class laptop, projector, computer) do not always work (T2, T4, T8) or report about a broken projector cable, remote control without batteries (T9) and issues with the cable connecting the iPad and the smartboard (T10). T5 states that the projector does not always switch on straight away, which causes agitation and T7 mentions that it sometimes shows no picture or the colors are strange because the cable is defective or has a loose connection. The projector also poses T4 challenges. She says that in some classes at her school, it is not mounted on the ceiling and projects backward. This means that the students always have to turn around, which disrupts the lesson, that taking notes is difficult and that she represents just a voice in the background (T4). Due to the lack of loudspeakers in the adjacent building, T2 could not do listening exercises so well for a whole semester, which was a big challenge for her. Furthermore, more than half of the teachers interviewed indicate that one challenge they have been encountering are internet connection issues or a bad internet connection, in general (T2, T3, T4, T5, T6, T9, T10), which resulted in not being able to complete a task (T6).

Further challenges are that learners quickly panic if something looks different on their device and have to click on one button less or more or when a cookie message appears (T1), that technology malfunctions (T2), that students are thrown out in the middle of a *Kahoot!* game (T7) and that some tools do not work (the same way) on all iPads (T6). T6 also mentions that the students once did not have access to a *LearningSnack* she had prepared and that showing learners how to use digital devices and tools is challenging. Additionally, T1 says that a student was unable to use a website because of the child lock which was set up on the computer by the parents and that she once had no access to the audio that she wanted to play because of maintenance work on the *HELBLING e-zone*. Since the smartboards are new, the students of T1 want to try them out, which quickly gets out of hand and instead of a serious learning object, it becomes more of a toy and she has to give the command for them to sit down. Another challenge is that some students sometimes cannot log in (T7) or that it takes ages until all the students, especially those from lower grades, have signed on and that it is then difficult to complete what has been planned (T8).

Some teachers have solved their issues by, for instance, purchasing their own small loudspeaker box (T2) or working with their personal laptop instead of with the class computer (T4). When running into internet connection problems, they use the hotspot on their smartphone

(T4), continue the exercise another time (T6) or do a task in the schoolbook or spontaneously play a game with the learners (T10). T1, T8 and T10 change their plans (e.g. switching to the textbook) to overcome challenges like having no access to an audio (T1), a malfunctioning computer (T8) or not being able to connect the iPad to the smartboard (T10). T7 and T9 always have a backup program in case something does not work and the former also tries to fix problems herself or reports them to colleagues via *WebUntis* who then come (T7). Learners are asked to work with a classmate on one digital device (T1, T7) or the teacher's PC (T1) when unable to log in on their laptop or smartphone (T7) or to use their computer due to the child lock (T1). Lastly, T5 gives her students a task to prevent or minimize the agitation caused by issues with the projector and T4 said in the interview that the problem with the projector was still to be solved by the technical assistant.

5.2. Discussion

Having presented the data collected related to the six research questions focusing on the use of digital devices and tools, as well as, the benefits and challenges of employing them and on the selection and introduction of the latter in the EFL classroom, the following chapter discusses the findings and tries to establish a relationship to the information provided in the literature review (see chapters two + three) and particularly to the results of previous studies (see subchapter 3.3.). Research projects that have yielded the same or similar results are either directly referred to in the running text or provided in brackets (e.g. (cf. ...)). In addition, the structure of the following subchapter equals that of the previous one concerned with the presentation of the results of the study carried out.

5.2.1. RQ1+2: Austrian teachers' use of digital devices and tools in the classroom

The first research question sought to explore which digital devices and tools Austrian EFL teachers use in their classrooms. According to the findings, they, as mentioned in 5.1.1., employ (desktop) PCs, laptops, smartphones, tablets/iPads, projectors, smartboards, interactive whiteboards, an Apple TV and ELMO, a projector (document camera), in their EFL classrooms. Some of these digital devices, namely smartboards, (desktop) PC, laptops, iPads and smartphones, have also been named by English teachers in a study conducted by Jones (2022). Computers are integrated by Norwegian upper-secondary school teachers in English lessons (Høyvik 2022: 55) and the smartboard, projector, PC and laptops are incorporated by Austrian

EFL teachers (Pilz 2022: 111-123). However, an Apple TV, document camera or interactive whiteboard were not mentioned as devices used by the participants of the studies reported in subchapter 3.3.

With regard to the digital tools, it can be stated that only a part of the 57 named in the interviews was also found in the studies by Moorhouse and Yan (2023), Jones (2022), Høyvik (2022), Pilz (2022) and Klein (2023). Apps, platforms and the like such as *LearningSnacks*, *Excel*, *ESL games*, *Excalidraw*, *WebUntis*, *Eduvidual* or *OneDrive* have not been named in the abovementioned publications. At this point, however, it must first be highlighted that Moorhouse and Yan (2023) did not list all 98 digital tools enumerated by the respondents, but only a selected number (Moorhouse & Yan 2023). It is, therefore, possible that there may be even more overlaps between the results of that study and the present research. Moreover, despite not being specifically related to teaching the English language, the digital tools used for administrative purposes (e.g. checking attendance/recording absences or the teaching material, calculating grades) such as *Vision*, *WebUntis* or *iDoceo* have been included in the study at hand since they are still employed in the EFL lessons. This might not have been the case in the other surveys. What comes as a surprise due to being included in the list of the ten most common digital tools used by the participants of Moorhouse and Yan (2023), is that *Google Classroom*, *Nearpod* and *Quizizz*, for instance, are not incorporated in the EFL classroom by the ten Austrian teachers interviewed. Further apps, platforms and the like which have not been named in the conversations held in the framework of this Master's thesis project, but in other studies conducted with English teachers in Austria are, amongst others, *Moodle*, *Lyrics Training* (Klein 2023: 74), *AnswerGarden*, *Flipgrid* (Klein 2023: 98) and *English4u* (Pilz 2022: 69-70). *Book creator* and *Google Docs* representing tools used by schoolteachers of English in Hong Kong (Moorhouse & Yan 2023) have not occurred either in the interviews.

Moving to the second research question concerned with the purposes for which digital devices and tools are used, it must be noted that previous studies did not examine what computers, smartphones, projectors and other hardware are employed for in as much detail as the present one has. Thus, drawing comparisons has not always been possible. To begin with, digital devices are used to open and upload materials, access tools, the Internet, online teacher books and solutions, show videos or movies, play audio, take notes, compose texts, enter in the digital class register, record grades and absences and write down who has completed the homework assignment as well as how well. They serve as a second screen and the purpose of visualizing the digital version of the textbook, materials and what the teacher does on his/her iPad so that the students can, for instance, read along. Additionally, the EFL teachers

interviewed turn on digital devices to do interactive activities, compare solutions to tasks and see their notes prepared in advance or who must still do a ‘Show what you know’. Similarly to the teachers interviewed, the respondents of Pilz (2022: 69) and Jones (2022: 332) stated that they used the online version of the English book on the smartboard.

As could be seen in section 5.1.1., digital tools are used for a variety of purposes by Austrian EFL teachers. First of all, they are employed to practice listening, writing and reading which aligns with the results of Jones (2022: 52-53). Speaking is, except with first graders, not trained via apps, platforms and the like. This is not surprising in light of the findings of Pilz (2022: 85) based on which speaking tasks are not part of Viennese lower-secondary school EFL teachers’ digital agenda (Pilz 2022: 85) and of Jones (2022: 52-53) according to which speaking skills are taught the least using digital tools (Jones 2022: 52-53). Furthermore, in line with what Jones (2022) has found, the ten teachers interviewed integrate digital tools into their EFL classrooms to conduct surveys, watch movies and videos, play music, listen to authentic language, illustrate what they (teacher and the students) are doing in class and plan lessons. They serve the purpose of communication (cf. Jones 2022: 56; Pilz 2022: 71; Klein 2023: 81), the sharing of files or documents (cf. Jones 2022: 333; Pilz 2022: 71; Moorhouse & Yan 2023) and the provision of feedback (cf. Moorhouse & Yan 2023) and as a place where the students are given homework (cf. Moorhouse & Yan 2023; Klein 2023: 74) and have to upload their work (cf. Jones 2022: 333; Klein 2023: 92). In addition, digital tools allow access to the digital version of the schoolbook, materials contained therein like audio, videos and songs and to supplementary exercises and solutions. The *HELBLING e-zone* is utilized for cyber homework by the ten interviewees, as well as by the participants of the studies by Klein (2023: 77) and Pilz (2022: 122), and to prepare the students for exams. Digital tools are, moreover, incorporated in ELT by the teachers in order to look words up (cf. Pilz 2022: 122, 146), teach, practice, review or check grammar or vocabulary (cf. Pilz 2022: 70, 123; Moorhouse & Yan 2023), provide input, promote intercultural competences and to create TikTok videos, mind maps, groups, Instagram postings, texts and tasks. Further reasons for employing apps, programs and co. are to render content more comprehensible and the explanation of words easier, let the learners have fun and reward them for good work, guide them through the lesson, support them in writing and preparing for speaking tasks, check if they have watched the entire video, familiarize them with tools, loosen up the lesson, carry out polls, edit photos and show places named in texts. Lastly, the ten EFL teachers interviewed have mentioned that they utilize digital tools for presentations, just like the participants in the study of Jones (2022: 64), quizzes, brainstorming activities, PowerPoint Karaoke, making interactive city tours and administrative

purposes (calculating grades, recording absences, ...), and as a substitute for the blackboard. In contrast to the ten interviewees, the respondents of previous studies discussed in subchapter 3.3. implement tools to, amongst others, teach the history of a country, improve pronunciation (Jones 2022: 224), trace the pupils' progress (Jones 2022: 63), differentiate (Jones 2022: 55), increase interactivity in the classroom, have the learners cooperate and respond to prompts anonymously (Moorhouse & Yan 2023), read articles about the latest news (Pilz 2022: 70), write vocabulary (Klein 2023: 81) or teach varied lessons (Høyvik 2022: 55-56).

5.2.2. RQ3+4: Austrian EFL teachers' selection and introduction of digital tools

The third research question aimed to determine the criteria based on which Austrian EFL teachers select digital tools for their classrooms. In view of the answers given, it can be said that the costs and the question of whether the students are required to create an account and provide personal data play a key role in the choice of an app, platform or co. The teachers interviewed select digital tools that are free or financed by the school and are usable for the pupils without having to log in. Hummels et al. (2021: 299-302) also point out that digital tools are ideally without charge or funded by the institution and that only the instructor should be obliged to provide personal data, if at all. The teachers stated that the tools must be ad-free, reliable, legitimate and feature a user-friendly, comprehensible, clear and appealing interface. User-friendliness is mentioned by Beyer (2021: 165) and Hummel et al. (2021: 298-299), too. Further important factors are that the tool either provides clear instructions or allows teachers to add some, suits the subject treated as well as the level and needs of the students, provides autocorrection and feedback, shows instructors who did the task or practiced, supplies instructors with information on their learners' performance and can be used on all devices. The latter point reflects the criterion *Access* cited in Hummel et al. (2021: 300). The teachers, moreover, prefer those tools that are accessible via a code, offer short exercises and have been developed by the textbook publisher or are recommended by the ministry, government, friends or other teachers. Other aspects they consider when choosing a new digital tool are whether prefabricated tasks or ideas on how it could be used in teaching exist and their or the students' familiarity with it. Hummel et al. (2021: 302) state that when students are familiar with the apps, platforms and the like, they feel comfortable using them. Other criteria such as *Required Equipment*, *Additional Downloads* or *Offline Access* described in Hummel et al. (2021) were not named by the Austrian EFL teachers. Ultimately, taking the above list of criteria into account, it can be argued that the teachers do not just select digital tools following the motto

"ich kenne da ein Tool" (Beyer 2021: 165), which is also to be avoided according to Beyer (2021: 165), but by bearing a number of factors in mind.

The fourth research question was concerned with the introduction of new digital tools. As already outlined in section 5.1.2., the ten Austrian EFL teachers introduce their students to apps, platforms and the like in different ways. While some first demonstrate to their learners how to access and use a tool step by step and then allow them to try it out and work with it, others only provide oral explanations. Besides this, T2 once provided her pupils with a 'tool guide' in addition to the visualization. The data collected shows that one instructor also asks one of her pupils to illustrate the way a digital tool is accessed and employed under her guidance and another has a student familiar with the tool introduce his/her classmates to it. Although they were not asked directly about what factors inform their choice of a method of introduction, it can be inferred from the teachers' statements that especially those digital tools that the learners also have to work with at home (e.g. *HELBLING e-zone*) and utilize to create content themselves (e.g. *Padlet*, *Canva* and *PowerPoint*) are thoroughly introduced by demonstration. In contrast, the use of others like *Mentimeter* or *Kahoot!* is explained orally most likely because the students only need to, for instance, choose one of the answers provided or type in a single or a few words. Last but not least, two teachers interviewed sometimes dispense with introducing a new digital tool and let the learners explore and get to know it by working with it. The reasons are that the students are perceived to be smart (T2) and to have a good feeling as to how apps and the like function (T5). To what extent and how other (English) teachers in Austria and worldwide introduce their learners to new digital tools could not be ascertained since no study investigating this aspect was found.

5.2.3. RQ5+6: Benefits of using digital devices and tools in ELT according to Austrian EFL teachers, challenges met and their solutions

The fifth research question explored the benefits the use of digital devices and tools offers according to Austrian EFL teachers. First of all, the teachers interviewed report that the learners have more fun and are more interested and motivated when integrating digital technology into the lesson which agrees with what, for instance, Pilz (2022: 71) has found. They are more involved and mentally challenged, feel less pressure when doing a review using a tool, can complete tasks at home whenever they want and do exercises repeatedly. Digital devices and tools allow for saving and sharing notes and access to documents or information (date of an exam or check-up, homework, ...) independent of location and hardware, as well as, in line

with Jones (2022: 47), to a wide range of resources. Learners can be exposed to authentic language which mirrors what Pilz (2022: 72) found. Other benefits are that content can be rendered clearer and easier to grasp for the learners and that teachers can reward them for good work in the lesson. Coinciding with the findings of Pilz (2022), by using digital media, the pupils train to handle them and a connection to their out-of-school reality can be established. Digital tools assist students in writing and guide them through tasks enabling independent work. Furthermore, communication between the teacher and learners is easier according to one interviewee which aligns with the results of Høyvik (2022: 51-52). The students' and teachers' lives are facilitated as, amongst others, all the materials are in one place (cf. Jones 2022: 47) and tools evaluate tasks (cf. Pilz 2022: 72) and give the pupils feedback. They provide teachers with an overview of who has practiced and, similar to what Pilz (2022: 72) found, what they can and cannot do. Further benefits of digital devices and tools are, according to the interviewees, that they enable a varied methodology, the escape from the normal, monotonous teaching routine, differentiation, meeting the learners' needs and the promotion of productive skills. When comparing the results of the present investigation with those of previous research, it can be observed that one teacher in this study speaks of sustainable work in the sense that fewer materials need to be printed while a participant of the interviews by Pilz (2022) mentions sustainable teaching on the grounds of the reusability of worksheets (Pilz 2022: 72).

The sixth research question sought to determine which challenges Austrian teachers have faced so far when incorporating digital devices and tools in their EFL classrooms and their solution strategies. Almost all teachers have experienced technical problems, such as a poor internet connection and equipment that either does not work or malfunctions. The teachers also mentioned login difficulties and that some digital tools would not work on all iPads. These findings coincide with previous research revealing that technical issues are one challenge English teachers face (Jones 2022: 47). Other challenges include missing speakers, activated child lock, maintenance work, long login times and the teaching of how to use digital devices and tools, in general. One teacher also speaks of panic among the students when there are differences in use and cookie messages and of chaos when they apply the new smartboard. Whereas the respondents in previous studies regarded the distraction of students while using digital technology as challenging, too (Jones 2022: 47; Høyvik 2022: 63-64), as well as, keeping the learners engaged in the task at hand (Pilz 2022: 73) and encountering inappropriate online content (Jones 2022: 47), the teachers interviewed described the above as potential drawbacks of using smartphones, apps and co. in ELT. To overcome their challenges, the interviewees bought equipment, utilize their private hardware or the data connection of their device or turn

to colleagues. They respond to difficulties by changing their plans which aligns with what one participant in the study by Pilz (2022: 66) said about his/her way of reacting to device issues. They continue the online task another time, switch to their backup plan and thus to the schoolbook. When facing problems, one teacher tries to fix them herself while another asks her pupils to do a task to prevent agitation. Students encountering difficulties using their digital devices or a tool are allowed to work with a classmate or on the teacher's device. As is evident from the preceding, the teachers have generally found a way to overcome the challenges.

6. Conclusion

The present study sought to have a closer look at the integration of digital devices and tools in the EFL classroom and discover the practices, beliefs and experiences of in-service English teachers. In order to collect data and answer the six research questions formulated, ten semi-structured interviews were carried out, recorded, transcribed and analyzed by means of qualitative content analysis by Mayring (2015, 2022a, 2022b). Some of the main findings are now summarized and limitations of the study and ideas for future investigations are outlined.

The results, first of all, show that the ten Austrian EFL teachers interviewed integrate several digital devices like (desktop) PCs, laptops, Tablets or iPads, smartphones, projectors and smartboards as well as a considerable number of digital tools in their lessons. To be more precise, a total of 57 different apps, programs, platforms and the like could be identified during data analysis. These include *digi4school*, the *HELBLING e-zone*, *Teams*, *Kahoot!*, *Canva*, *Padlet*, *YouTube*, *Mentimeter*, *WebUntis*, *LearningApps*, *Forms*, *Edpuzzle*, *Excel* and *OneNote*. As pointed out in section 5.2.1. of this thesis, these findings align partially with those of prior research investigating which digital devices and tools English teachers employ.

Concerning the second research question this study aimed to answer, it was established that Austrian EFL teachers use digital devices and tools for a wide variety of purposes. The former are, amongst others, incorporated to access and visualize materials like the online version of the schoolbook and tools, play audio, show movies or videos, record absences and grades and write texts together in class. Digital tools are, in comparison to this, utilized to, for instance, practice reading, listening and writing as well as to communicate, conduct surveys or polls, share files, teach or review vocabulary or grammar, provide input or feedback, render content more comprehensible and guide learners through the lesson or reward them for good work. They are also employed for administrative purposes, cyber homework and brainstorming activities. These findings agree with those of prior studies as well to a certain degree (see section 5.2.1.).

When selecting a new digital tool for their teaching, it is of vital importance for Austrian EFL teachers that they are free or that the school covers the fees and that the students are not required to create an account to be able to use the app or program. Whether or not they choose a certain tool also depends on its user-friendliness, interface, usability on diverse devices, reliability and their or the pupils' familiarity with it. Furthermore, the ten EFL teachers interviewed opt for those that suit the subject discussed and the level and needs of the students, provide them with information on their learners' performance on the task, give feedback to the students, offer autocorrection and prefabricated exercises or are recommended by colleagues, friends or the ministry or developed by the publisher of the textbook.

Regarding the introduction of new digital tools in the classrooms and thus the fourth research question, it was discovered that Austrian EFL teachers either thoroughly demonstrate or orally explain to their learners how to access and use a certain app, program or platform before they are allowed to work with it. Some also ask one of their students to introduce his/her classmates to it, while others sometimes have their pupils familiarize themselves with it by independent exploration.

The findings related to the fifth research question reveal that digital devices and tools offer numerous benefits for ELT. Amongst others, the ten Austrian EFL teachers mentioned that the learners have more fun, are more interested, motivated, mentally challenged, involved and relaxed even when doing a review when digital media is used. In addition, they enable access to materials and information from any place and hardware, exposure to authentic language, easy communication, sustainable work, a varied methodology, the escape from the routine, differentiation and catering to the students' needs. Aside from this, digital devices and tools help render the content clearer and easier to grasp, support the pupils when writing, and facilitate the teachers' lives by evaluating tasks, providing information on the students' proficiency and giving feedback to the learners. Some of the benefits enumerated by the interviewees correlate with those found in other studies as indicated in section 5.2.3.

Apart from the benefits, the ten Austrian EFL teachers were also asked to report on the challenges they have faced so far when using digital devices and tools in their classrooms as well as on the solutions they have found. Based on the findings, it can be said that they, similarly to participants of the study by Jones (2022), have encountered technical issues. These encompass non-functioning, malfunctioning or incorrectly mounted hardware or poor internet connection. They talked about missing equipment, login difficulties, activated child lock, maintenance work, cookie messages resulting in panic among the learners and chaos when working with the new smartboard. The teachers interviewed respond to challenges by, for

example, switching to their backup plan and continuing the online task in another lesson, purchasing or utilizing their own equipment, letting pupils unable to work with their devices join a classmate or use the teacher's hardware and assigning them a task to complete.

The present study gives a comprehensive and valuable insight into the practices, beliefs and experiences of Austrian EFL teachers in connection to using digital devices and tools in the classroom. However, it also has its limitations, which need to be considered and kept in mind. First of all, the findings are not representative nor generalizable due to the low number of participants. The fact that the results of semi-structured interviews cannot be generalized because of the usually small sample size is also considered a disadvantage of this method of data collection by Dörnyei (2007: 41). Moreover, as teachers from only three of the nine Austrian provinces were interviewed, namely Vienna, Lower Austria and Upper Austria, the results cannot be applied to the whole country. The reason for this underrepresentation of teachers from other provinces could be the way participants were recruited which mainly included the circulation of an interview request message among students of the University of Vienna. Another limitation of this study is that the findings are exclusively based on what the interviewees said and thus on subjective reports of their practices and challenges. Consequently, the reliability and validity of the results cannot be ensured. Lastly, the data gathered was only analyzed and interpreted by one person, namely myself, and it could be that other people come to different conclusions.

Future research may involve more interview partners, ideally encompassing some from all nine Austrian provinces, with the aim to yield results that are more representative and permit generalization. Furthermore, it could be more closely examined whether the practices, experiences and beliefs regarding digital devices and tools in language teaching and learning differ between teachers at different school types (e.g. *AHS*, *Mittelschule*, *HAK/HTL*, ...). It would be interesting, as well, to analyze the extent to which the teachers' media competence or digital competencies and the level of intensity of their private use of digital media impact their implementation of digital devices and tools in the classroom. Since speaking is not really practiced via apps, platforms and co. by the ten interviewees, future studies may place a special focus on this skill and attempt to find out which tools are utilized and determine some example activities.

Last but not least, this study provides novice and future (language) teachers with various digital tools usable in the (EFL) classroom and ideas on how and the purposes for which they, as well as diverse digital devices, could be integrated. In addition, I do not only hope that the findings assist them in selecting appropriate apps, platforms and co. for their teaching and in

introducing their learners to the tools, but also that the great number of benefits the incorporation of digital technology in the lessons offers for the learners and themselves make them view potential challenges less negatively.

7. References

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8. Appendix

8.1. Interview guide

Hallo ...! Vielen Dank, dass Sie sich bereit erklärt haben, heute an diesem Interview teilzunehmen. Ich führe dieses Interview im Rahmen meiner Masterarbeit an der Universität Wien. Diese befasst sich mit dem Einsatz von digitalen Endgeräten und Werkzeugen im Englischunterricht an österreichischen Schulen. Das bedeutet, dass ich daran interessiert bin zu erfahren, welche digitalen Endgeräte und Werkzeuge Sie als Englischlehrer/in in Ihrem Unterricht einsetzen und wofür. Außerdem würde ich gerne herausfinden, nach welchen Kriterien bzw. mit welchen Gedanken Sie ein digitales Werkzeug auswählen und wie Sie es Ihren EnglischschülerInnen vorstellen beziehungsweise dessen Verwendung erklären. Schließlich bin ich neugierig darauf zu erfahren, welche Vorteile (und Nachteile) digitale Endgeräte und Werkzeuge Ihrer Meinung nach bieten und mit welchen Herausforderungen Sie bisher konfrontiert waren, als Sie diese in Ihren Unterricht integriert haben und wie Sie diese lösen beziehungsweise lösen konnten. (Notiz an mich: Teile das Zusatzdokument mit Definition + Beispielen aus und lasse die Person mitlesen!) Wenn von digitalen Endgeräten die Rede ist, sind z.B. Smartphones, Laptops, Tablets und Smartboards/interaktive Whiteboards gemeint. Als digitale Werkzeuge bezeichne ich in meiner Arbeit, jegliche Art von Software, Plattformen, Programme, Apps und online oder offline Quellen (Ressourcen), die auf einem digitalen Endgerät verwendet werden können. Beispiele hierfür wären *Kahoot!*, *Moodle*, *Google Docs*, *YouTube*, ...

Das Gespräch sollte etwa 45-60 Minuten dauern, je nachdem, wie viel wir reden natürlich. Es gibt keine richtigen oder falschen Antworten auf die Interviewfragen. Wenn eine Frage schwer verständlich ist, fragen Sie bitte nach, wenn Sie eine kurze Pause einlegen möchten, lassen Sie es mich bitte auch wissen. Sie können auch die Antwort verweigern, ohne dass Sie eine Erklärung abgeben müssen.

Bevor wir beginnen, möchte ich Sie fragen, ob ich unser Gespräch aufzeichnen darf. Die Aufnahme wird nicht an Dritte weitergegeben. Das Interview wird anschließend an unsere Unterhaltung transkribiert und diese Abschrift wird für meine Masterarbeit ausgewertet. Seien Sie versichert, dass alles, was Sie sagen, anonymisiert wird und die Aufnahme nach der Abgabe meiner Arbeit und der Ablegung meiner Defensio gelöscht wird. Haben Sie irgendwelche Fragen, bevor wir mit dem Interview beginnen?

Einstiegsfragen: Hintergrundinformationen zur befragten Person und Schule

1. Welche Fächer unterrichten Sie?
2. Wie lange sind Sie schon als Lehrer/in tätig?
3. Können Sie mir etwas über Ihren derzeitigen Unterrichtskontext erzählen, sprich in welchem Schultyp Sie unterrichten, in welchem Bundesland die Schule liegt, (welche Schulstufen - Unter-/Oberstufe falls AHS) etc.?
4. Inwieweit wird der Einsatz digitaler Endgeräte und Werkzeuge an Ihrer Schule gefördert? Gibt es an Ihrer Schule sowas wie eine Vorschrift oder eine andere Art von „Anstoß“ bezüglich der Verwendung dieser im Unterricht? Und wenn ja, wie sieht diese/r aus?
5. Wenn man durch Ihre Schule geht und sich in den einzelnen Klassenzimmern umsieht, welche digitalen Endgeräte findet man dann?

Die Nutzung digitaler Endgeräte und Werkzeuge durch EnglischlehrerInnen

6. Welche digitalen Endgeräte und Werkzeuge verwenden Sie in Ihrem Englischunterricht? (-> eventuelle Hilfestellung durch Bezug auf einzelne Kompetenzen/Fähigkeiten – Lesen, Schreiben, Hören, Sprechen, Wortschatz, Grammatik, Aussprache, interkulturelle oder soziale Kompetenzen, Medienkompetenz – bzw. Tests, Hausübungen, Organisatorisches, ...)
7. Wie häufig arbeiten Sie mit diesen digitalen Endgeräten und Werkzeugen in Ihrem Englischunterricht? Gibt es hierbei Unterschiede in Bezug auf die Schulstufe, SchülerInnenanzahl, etc.? Warum/warum nicht?
8. Welche der vorhin genannten digitalen Endgeräte und Werkzeuge verwenden Sie am häufigsten? Welche am wenigsten? Warum?
9. Erzählen Sie mir, vielleicht anhand konkreter Beispiele/Aktivitäten aus der Praxis, wie und wofür Sie die genannten digitalen Endgeräte und Werkzeuge in Ihrem Englischunterricht verwenden?
10. Für welchen Zweck nutzen Sie digitale Endgeräte und Werkzeuge am häufigsten? Für welchen am seltensten? Warum ist das so?
11. Nutzen Sie digitale Endgeräte und Werkzeuge in all Ihren Klassen zum selben Zweck oder gibt es hier Unterschiede (nach SchülerInnenanzahl, Schulstufe, Unter-/Oberstufe,...)? Basierend auf welchem/n Gedanken unterscheiden Sie hier/nicht?
12. Digitale Endgeräte und Werkzeuge können auf verschiedenste Arten in den Unterricht eingebaut werden. Eine Form ist das sogenannte „blended learning“, welches eine Kombination von Präsenzlernen und Onlinelernen ist. Inwiefern wird „blended

learning“ von Ihnen im Englischunterricht verwendet? (eventuell nachfragen: Welche Tools, wann, wie oft, warum/wofür, welche Schulstufe(n), Beispiele/Aufgaben)

12a.

Weiters gibt es dann noch den „flipped classroom“ oder „inverted classroom“, eine spezielle Form des „blended learning“, bei der der Inhalt/Input außerhalb des Klassenraums mittels Lehrvideos zum Beispiel vermittelt und dann im Unterricht vor Ort angewendet wird. Inwieweit kommt der „flipped/inverted classroom“ bei Ihnen in Englisch zum Einsatz? (eventuell nachfragen: Welche Tools, wann, wie oft, warum/wofür, welche Schulstufe(n), Beispiele/Aufgaben)

13. Es gibt eine Vielzahl von Apps, Plattformen, Websites und Co.. Worauf achten Sie bei der Auswahl eines digitalen Werkzeuges für Ihren Englischunterricht? (Notiz an mich: Ziel= Auswahlkriterien erfahren, wenn existent)

14. Erinnern Sie sich bitte an das letzte Mal, wo Ihre SchülerInnen ein, bis dato noch nie im Unterricht eingesetztes, digitales Werkzeug verwenden sollten. Welches war das? Wie haben Sie Ihren SchülerInnen damals gezeigt, wie man dieses benützt? Haben Sie noch weitere Strategien bezüglich der Einführung neuer digitaler Werkzeuge im Unterricht? /Weitere Beispiele aus der Praxis, vielleicht für andere digitale Werkzeuge?

Potenziale, Nachteile und Herausforderungen im Zusammenhang mit digitalen Endgeräten und Werkzeugen

15. Welche Vorteile bieten digitale Endgeräte und Werkzeuge Ihnen und Ihren SchülerInnen?

16. Welche Nachteile haben diese Ihrer Meinung nach?

17. Welchen Herausforderungen sind Sie bereits begegnet, als Sie digitale Endgeräte und/oder digitale Werkzeuge im Unterricht oder zur Vorbereitung auf diesen eingesetzt haben? Wie haben Sie diese gemeistert bzw. bewältigen Sie diese? (eventuell: Was bräuchten Sie, um diese lösen zu können?)

Abschlussfragen

18. Welche Ratschläge haben Sie für angehende LehrerInnen, die daran interessiert sind, digitale Endgeräte und Werkzeuge in ihren Englischunterricht zu integrieren?

19. Gibt es irgendetwas, das Sie noch hinzufügen oder näher erläutern möchten?

Vielen Dank für Ihre Teilnahme an diesem Interview, welches sehr aufschlussreich und interessant war!

Digitale Endgeräte	Digitale Werkzeuge
• Smartphone • Computer • Laptop • Tablet • Smartboard/interaktives Whiteboard	➔ Software, Plattformen, Programme, Apps und online oder offline Quellen (Ressourcen), die auf einem digitalen Endgerät verwendet werden können. <u>Beispiele:</u> Kahoot!, Moodle, Google Docs, YouTube, Facebook, Padlet, Zoom, Canva, Whatsapp, ...

8.2. Coding frame

Categories	Definitions of the categories	Anchor examples from the data	Coding rules
1. Background information on the interviewee, teaching context and school			
1.1. Interviewee	-> comprises all information on the interviewee's subjects and duration of teaching activity	"Also ich unterrichte jetzt Englisch, Berufsorientierung und digitale Grundbildung." (T10)	-> subjects of the person interviewed + how long he/she has been working as a teacher
1.2. Grade(s) taught in English	-> includes information on the grade(s) the interviewee teaches in English	"Also ich habe jetzt eine 3. und zwei 4. Klassen." (T10)	-> grade(s) the interviewee teaches in English
1.3. School type and location	-> encompasses the statement(s) regarding the location and type of the school the interviewee is working at	"Also ich unterrichte in einer Mittelschule in Wien." (T5)	-> school type + location (state)
1.4. Policy/guideline/encouragement regarding the use of digital devices and tools	-> includes the interviewee's answer on whether there is any kind of promotion or guideline regarding the use of digital	"Ich weiß auch von keiner Definition oder Vorschrift, aber wir sind dazu angehalten, die iPads so oft wie möglich zu verwenden und in	policy/guidelines/encouragement related to the teachers' use of digital devices and tools at the school + all details on it

	devices and tools at his/her school and a description of it	jedes Fach zu integrieren.” (T10)	
1.5. Digital equipment in the classrooms	-> comprises the digital devices that can be found in the classrooms of the interviewee’s school	“Computer haben wir in den Klassen, also wir haben jeweils einen Stand-PC und die meisten Lehrer haben eben auch iPads.” (T10)	-> all digital devices available in the classrooms of the school the interviewee is working at
2. Digital devices and tools used	-> applies whenever the person interviewed mentions a digital device or tool he/she uses in his/her English classroom	“Also eigentlich in jeder Einheit das Smartboard, manchmal den PC.” (T10) “Dann habe ich manchmal eben die üblichen Plattformen wie Kahoot! und YouTube.” (T10)	-> all digital devices and tools used by the interviewee -> details on the way they are used + the purpose(s) are not included
3. Frequency of using digital devices and tools and possible differences	-> encompasses all comments by the interviewee on the frequency of using digital devices and tools in the EFL classroom	“Jetzt fällt mir noch etwas ein, was ich nicht genannt habe, und ich glaube, dass wir das schon am häufigsten verwenden. Digi4school wurde schon genannt, aber es gibt auch vom Helbling Verlag diese HELBLING e-zone, wo du cyber homework und so geben kannst.” (T10)	-> information on the frequency of the use of digital devices and tools -> statements on whether and why the frequency may differ according to grade

		“Ok, also MS Teams ist am häufigsten, das ist ja eindeutig.” (T5) “Ja, es gibt noch etwas, was ich verwende, aber sehr selten und das heißt Edpuzzle. Und ja, man kann sich Videos anschauen und Aufgaben erstellen dazu und ja, das verwende ich nicht so oft.” (T5) [...] “Und es gibt einen ganz einfachen Grund, es ist sehr viel Arbeit diese Fragen zu, also wirklich ein gutes Video zu finden und gute Fragen zu erstellen.” (T5)	
4. Way(s) and purpose(s) of using and integrating digital devices and tools in English language teaching	-> applies whenever the person interviewed describes how he/she employs a digital device or/and tool / an activity/mentions the purpose of using a digital device or tool	“Google Maps habe ich auch einige Male verwendet, damit wir halt immer wieder Orte nachschauen konnten, die in Texten vorkamen, wo sich die befinden.” (T10) “Ich erstelle auch diese Quizzes mit Forms.” (T5)	-> everything said about how and for which purpose(s) digital devices and tools are used in English by the interviewee
5. Frequency of using a digital	-> includes any statement made by	“Ja, ich würde sagen, [am häufigsten für]	-> all information on how often a digital

device or tool for the same purpose(s) and possible differences	the interviewee relating to the frequency of incorporating a digital device or tool for the same purpose(s) in his/her classrooms	Organisation, eben meine eigene, und Veranschaulichung beziehungsweise Visualisierung. ” (T 10) “Nein, ich glaube, da würde ich nicht unterscheiden.” (T5)	device or tool is employed for the same purpose(s) -> comments on whether and for what reason(s) the purpose(s) of the use may vary according to grade
6. Integration of blended learning and flipped classroom	-> encompasses what the interviewee states regarding his/her integration of blended learning and flipped classroom	“Ich, ja oft, also ich, ich hab, es gibt viele Hausaufgaben, die sozusagen online gemacht werden müssen.” (T5) “Das eher wenig bis gar nicht.” (T10) [...] “Nein, ich, vielleicht liegt es auch an mir, aber ich habe das Gefühl, ich kann nichts voraussetzen, dass sie zuhause machen, weil es viele leider nicht machen.” (T10)	-> Statements regarding the implementation of blended learning and flipped classroom in ELT (yes/no, how often, which grades, which tools are used,...)
7. Selection (criteria) of digital tools	-> comprises the factors that are important for the interviewee when choosing a new digital tool (e.g.	“In erster Linie eigentlich schon, dass es kostenfrei ist beziehungsweise, dass die Schule das finanziert.” (T10)	-> everything the interviewee mentions regarding his/her choice of digital tools

	requirements + no-gos)	“Also am einfachsten ist für mich, wenn sie den Code nur einscannen müssen und dann geht es schon los.” (T5)	
8. Introduction of digital tools	-> includes all statements made by the interviewee regarding the introduction of new digital tools to his/her students	“Ja manchmal sage ich, sie sollen das ausprobieren und es funktioniert auch oft, weil sie dann auch mit irgendwie, auch ein gutes Gefühl dafür haben, wie die Apps funktionieren.” (T5) “Ich habe dann vorgezeigt, wie man ihn verwendet, zum einen diese Übersetzungsfunktion, aber dann auch diese KI Schreibassistentz, die dann auch Sätze verbessert quasi.” (T10)	-> information on whether the interviewee introduces the digital tools to his/her students -> description of how digital tools are/were introduced to the students by the interviewee in class
9. Benefits of using digital devices and tools	-> applies if the person interviewed mentions a benefit that the integration of digital devices and tools offers	“Dass ich überall Zugriff auf meine Unterrichtsvorbereitungen habe und auch auf meine Schulbücher.” (T10) “Die authentische Sprache natürlich jetzt bei YouTube Videos	-> benefits of using digital devices and tools in the classroom according to the interviewee

		oder irgendwelchen TikTok Videos.” (T5)	
10. Downsides to using digital devices and tools	-> describes the negative aspects of using a digital device or/and tool in one’s classroom reported by the interviewee	“Was ich natürlich auch weiß, das manche Kinder machen, sie haben eine Aufgabe auf dem iPad und auf einmal, wenn die Lehrer nicht mal schaut, spielen sie.” (T5)	-> all downsides, if existent, regarding the use of digital devices and tools according to the interviewee
11. Challenges and their (possible) solutions	-> encompasses all statements regarding a/the challenge/s the interviewee have faced when using a digital device and/or tool in the EFL classroom + the solutions found to overcome it/them -> includes information on any support necessary to be able to overcome the challenge(s), as well	“Gerade gestern ging das Verbindungskabel in einer Klasse nicht für mein iPad.” (T10) “Also das unser Internet manchmal nicht so gut funktioniert und ja dann müssen wir aufhören.” (T5) “Oder wenn ich das Beamer, sich nicht gleich einschaltet, dann entsteht natürlich auch eine gewisse Unruhe.” (T5) “Ja, ich schaue, dass ich, dass sie schon auch immer ein bisschen eine Aufgabe haben.”	-> challenge(s) met when using a digital device and/or tool in class by the interviewee -> how it/they is/was/are/were overcome -> information on any additional support needed to solve the issue(s)
12. Advice for novice teachers	-> comprises the interviewee’s advice	“Nein, also einfach ausprobieren, auch	-> every piece of advice for beginners

	for novice teachers concerning the use of digital devices and tools in teaching	geduldig sein, weil so wie ich gesagt habe, also manche Sachen funktionieren nicht sofort und es ist vielleicht doch sinnvoll, sie zu probieren, also nicht gleich aufgeben, wenn eine Sache nicht funktioniert.” (T5)	concerning the integration of digital devices and tools in ELT
13. Further final comments	-> includes the statements made by the interviewee intended to complement or explain what was said about his/her use of digital devices or/and tools, their selection, introduction, benefits, downsides or challenges	“Was cool wäre ist, wenn sich Lehrerinnen und Lehrer mehr darüber austauschen würden.” (T10)	-> further information on the use of digital devices and tools, how they are selected and/or introduced, the benefits and/or downsides of integrating them, challenges met

Abstract in English

Digital media are increasingly becoming a part of our everyday lives (Schaumburg 2015: 4) and are also to be integrated into foreign language teaching in various ways (BMBWF 2024a). Future and novice English teachers and those who are not so familiar with digital media ask themselves, among other things, which technologies they should use and for which purposes, how they should select them and what challenges may arise when employing them. This Master's thesis examines the use of digital devices and tools in the Austrian EFL classroom and the practices, beliefs and experiences of in-service English teachers who employ computers, apps and co. Previous studies have shown that teachers of this subject incorporate, for example, smartphones, PCs, *YouTube*, *Kahoot!* (Jones 2022: 48), *Nearpod* and *WhatsApp* (Moorhouse & Yan 2023) into their lessons and use technology for purposes like practicing listening and reading skills (Jones 2022: 52-53) and conducting surveys (Jones 2022: 222). Challenges, such as technical problems (Jones 2022: 47), are, however, mentioned as well. To collect data for this Master's thesis, semi-structured interviews were conducted with ten Austrian EFL teachers from *Mittelschule*, *AHS* and *HTL*. The conversations were recorded, transcribed and analyzed by means of qualitative content analysis by Mayring (2015, 2022a, 2022b). The results regarding the digital devices and tools used in English lessons and the purposes for which they are employed as well as the advantages and challenges mentioned by the interviewees correlate partially with the findings of previous studies. The interview participants stated that they, for instance, use laptops, smartphones, *digi4school*, *Kahoot!*, *YouTube* and *WebUntis*. Digital devices are utilized to, amongst others, play audio or record absences and tools are incorporated into lessons to, for example, practice listening skills, to communicate and to review grammar or vocabulary. According to the EFL teachers, their use increases the pupils' motivation and interest and allows access to materials from any location, but also poses challenges. When selecting apps and co., it is important for the respondents that they, for example, offer autocorrection, are user-friendly and free or financed by the school. Finally, the results show that the ten EFL teachers introduce their students to new digital tools by, amongst others, demonstrating and/or orally explaining how to use them.

Abstract in German

Digitale Medien werden zunehmend zu einem Bestandteil unseres Alltags (Schaumburg 2015: 4) und sollen auch im Fremdsprachenunterricht auf verschiedene Arten eingebaut werden (BMBWF 2024a). Zukünftige, neue sowie mit digitalen Medien nicht so vertraute EnglischlehrerInnen fragen sich, unter anderem, welche Technologien sie für welche Zwecke einsetzen beziehungsweise wie sie diese auswählen sollen und welche Herausforderungen bei deren Verwendung auftreten können. Die vorliegende Masterarbeit untersucht den Gebrauch digitaler Geräte und Werkzeuge im österreichischen Englischunterricht sowie die Praktiken, Ansichten und Erfahrungen von bereits unterrichtenden EnglischlehrerInnen, die Computer, Apps und Co. verwenden. Bisherige Studien haben gezeigt, dass Lehrpersonen dieses Schulfaches beispielsweise Smartphones, PCs, *YouTube*, *Kahoot!* (Jones 2022: 48), *Nearpod* und *WhatsApp* (Moorhouse & Yan 2023) in ihren Unterricht einbauen und Technologien für Zwecke wie das Trainieren der Hör- und Lesekompetenz (Jones 2022: 52-53) und die Durchführung von Umfragen (Jones 2022: 222) einsetzen. Es wird aber auch von Herausforderungen, wie technischen Problemen (Jones 2022: 47), berichtet. Um Daten für die vorliegende Masterarbeit zu sammeln, wurden semi-strukturierte Interviews mit zehn Englischlehrpersonen der Mittelschule, AHS und HTL geführt. Die Gespräche wurden aufgenommen, transkribiert und analysiert basierend auf der qualitativen Inhaltsanalyse von Mayring (2015, 2022a, 2022b). Die Ergebnisse bezüglich der im Englischunterricht eingesetzten digitalen Geräte und Werkzeuge und deren Verwendungszwecke sowie die von den Interviewten angeführten Vorteile und Herausforderungen stimmen teilweise mit den Resultaten bisheriger Studien überein. Die InterviewteilnehmerInnen gaben an, beispielsweise Laptops, Smartphones, *digi4school*, *Kahoot!*, *YouTube* und *WebUntis* zu verwenden. Digitale Geräte werden, unter anderem, zum Abspielen von Audioaufnahmen oder zum Eintragen von Abwesenheiten genutzt und Werkzeuge werden, zum Beispiel, zur Förderung des Hörverständnisses, zur Kommunikation sowie zur Grammatik- oder Vokabelwiederholung im Unterricht eingebaut. Ihr Einsatz steigert, laut den EnglischlehrerInnen, die Motivation und das Interesse der SchülerInnen und ermöglicht den ortsunabhängigen Zugang zu Materialien, bringt aber auch Herausforderungen mit sich. Wichtig bei der Auswahl von Apps und Co. ist für die Befragten, dass diese, zum Beispiel, Autokorrektur anbieten, benutzerfreundlich und gratis sind oder von der Schule finanziert werden. Zu guter Letzt zeigen die Ergebnisse, dass die zehn EnglischlehrerInnen ihren SchülerInnen neue digitale Werkzeuge vorstellen, indem sie, unter anderem, deren Verwendungsweise vorzeigen und/oder mündlich erklären.