Student teachers' first experiences with teaching English using digital media.

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This study provides

- insights into student teachers' learning in the field of media-based primary TEFL
- insights into challenges and potentials of including digital media in primary TEFL

1. Rationale

This qualitative study explores the experiences and challenges of using digital media for A1.1 and A2 level ELT as experienced by student teachers of primary education in Viennese schools. The focus throws light on the experiences and issues arising during the 7th semester ELT teaching internship of undergraduate final year students who have chosen English and German as a Second Language as their core subjects when using digital media in their teaching of English in primary and secondary classes. Helping student teachers to learn how to use digital media effectively for their own teaching plays a crucial role in raising their awareness of the advantages that using online tools can have. This especially applies to English and other foreign languages as various digital media, if implemented purposefully within the teacher's media pedagogy (Stockwell and Reinders, 2019, p. 43), can provide access to authentic language in the form of written, oral and aural texts as well as tasks and opportunities to effectively, and playfully, train all language skills. Research on technological tools in educational settings shows that these approaches can be beneficial for the pupils' motivation, activation and responsibility as well as principles of individualization and interactivity (Majoral, 2018, p. 325).

Research also shows that student teachers (Jokiaho, Keßler and Rymeš, 2017, p. 2) and in-service teachers (Stockwell and Reinders, 2019, p. 45; Thang, 2014 p. 325) tend to be reluctant to use digital media in their teaching. The first lockdown in response to COVID-19 brought this problem to light, during which Austrian teachers were more reluctant to use online platforms and digital tools than their colleagues in other European countries (Trültzsch-Wijnen, C.W. & Trültzsch-Wijnen, 2020), even if their pupils had sufficient technical equipment for online learning at home (Ibid). This difference was especially striking in Austrian primary

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schools. The authors suggest that media use needs to be increased in Austrian schools and, as a result, in teacher education for all school types (p. 32).

Little research has been conducted in the field of primary ELT with digital media. Gabriel (2016, p. 18) argues that, if designed well, digital games provide opportunities for learning lexis, discourse, grammatical structures, cultural and social aspects. She also argues that digital games can provide considerable motivation for pupils due to authentic contexts and the chance for interaction with others and maintain motivation for a long time due to the fun factor (p. 18). Similar benefits are mentioned by Schuch (2020) who investigated the effects of digital storytelling for educators in primary, secondary and higher education. Moreover, Del-Moralez-Perez et al.'s (2019) study on digital storytelling with primary teachers in Asturias, Spain, found that teachers identified improvements in their pupils' communicative competence, as well as audio-visual comprehension. They also found that the pupils demonstrated strong interest in the digital tools (p. 360-361).

Some researchers have reservations regarding the effectiveness of digital technology for learner motivation. Stockwell and Reinders (2019) argue that teachers often have unrealistic expectations about the effectiveness of digital media. The idea that digital media itself is a motivator for language learning stems from a time when media was more of a novelty (Murray, 1998 in Stockwell and Reinders, 2019, p. 43). Whilst digital media offers possibilities for motivated learners who tend to act autonomously, they argue that many teachers tend to overestimate their pupils' technological skills. However, the learning environment in which an activity takes place, the teachers' training and appropriate media pedagogies play a bigger role for motivation than the use of technology itself (p. 43). "What becomes evident is that technology itself is not the key issue in motivating learners, but rather what they can do with the technology and whether or not they see how this relates to their individual language learning objectives" (p. 43). When confronting young learners with technology, it is also important to acknowledge the risks of using it in a school context. Majoral (2018) describes distraction from schoolwork as one of the risks since children normally use mobile devices outside the classroom. Furthermore, the use of mobile devices could lead to unethical behaviour, such as cyber bullying, and health risks due to a long time in front of screens. Children might also not understand what information is appropriate to be shared in certain places or access websites that are designed for adults. She also argues that some apps are badly designed. To tackle these challenges, she calls upon digital literacy to be included into primary curricula (p. 323) and, as a result, teacher education programmes.

It is therefore important to integrate media well within the different subjects of teacher education, which this study aims to contribute to. The research is based on the analysis of reflection protocols that student teachers wrote during their 7th semester teaching internship. Placements offer student teachers the opportunity to interact with pupils, for self- and peer reflection, and to understand their own behaviours and ideas about their values and philosophies (Gebhard, 2009, p. 252). Usually, reflection tasks are part of supervised teaching placements. Some researchers urge caution about the overall effectiveness of reflective practice, as it is not always clear what teachers exactly do during reflection (Burton, 2009, p. 303). However, the ability to reflect on their practices in order to take informed decisions when adapting their teaching has been highlighted as an important learning goal of teacher education (Farrell, 2019, p. 38). For this purpose, especially written reflection has been described to be beneficial, as "[t]he act of writing has a built-in reflective mechanism; teachers must stop to think and organize their thoughts before writing and then decide on what to write.

After this they can 'see' their thoughts and reflect on these for self-understanding and development" (Farrell, 2019, p.45). Reflective practices are, therefore, a valuable component of teacher education (Burton, 2009, p. 304).

The student teachers were asked to actively create opportunities for "technology-mediated ELT with young learners", which includes language learning software, interactive white boards and projectors, tablets/mobile phones, asynchronous computer-mediated communication (CMC), live CMC, and web-based materials (Whyte and Schmid 2019, 341-2). Since the quantity and quality of technical equipment varies greatly between schools, the participating student teachers were free to select tools and activities. As discussed above, it is important to acknowledge that teaching with digital media needs to be planned carefully and reflected critically and that it needs to be implemented well in a lesson.

Equipping future teachers with the skills to integrate technology in their teaching has the potential to transform pupils' learning experiences and initiate a technological turn in the Austrian school system. Furthermore, it contributes to the United Nation's SDG 4.1, which aims to provide equal and free education for all and to facilitate effective learning (United Nations, 2022). The claim that media education in the context of language education must be integrated into teacher education programmes is shared by various researchers (Thang et al., 2014, p. 361; Gabriel, 2016/2, p. 6). The Austrian *Nationaler Bildungsbericht* also stresses the need to include contents of digital learning and teaching in the curricula of the *Pädagog/innen-Bildung NEU*, as well as the application of these contents during student teachers' teaching placements and in subject-specific courses (BMBWF, 2021, p. 360-361). This stipulation has been put into practice in the Austrian 2022/2023 school year, as the subject *Digitale Grundbildung* has been introduced on lower secondary level, and media education will be an overarching theme in the new Primary Curriculum, which is currently under review (RIS, 2022). The implementation of media education in the primary curriculum will also have consequences for teacher education, and the Federal Austrian Ministry of Education, Science and Research claims for a new teacher training programme for *Digitale Grundbildung* to be developed (BMBWF, 2022).

For this purpose, various frameworks describing digital skills required by teachers have been suggested, such as *The Cambridge English Digital Framework* (Carrier & Nye, 2017, p. 216), the *European Framework for the Digital Competence of Educators* (European Commission, 2017) and the Austrian *digi.kompP Kompetenzmodell* (Onlinecampus Virtuelle PH, 2019).

Thus, further research in this field is necessary to be able to provide high-quality input in teacher education, which this article aims to contribute to. In so doing, this research project will provide important insights into aspects that need to be considered when designing courses which prepare student teachers to use digital media in their EFL classes.

2. Research questions

The following research questions were central to this study:

RQ1

> Which criteria do student teachers use to choose digital tools for their teaching of English?

RQ2

What positive and negative experiences do the student teachers have when using the tools?

3. Study description

3.1 Sampling and participants

The participants of this study are 16 final-year undergraduate student teachers of primary education at the Private University College of Teacher Education Vienna/Krems who have chosen English as their core subject. As part of their 7th semester teaching placement, these student teachers were placed in both, a primary and a secondary school for the course of a semester where they must teach one English lesson each week and write reflections about their lessons. In a seminar session which is part of the internship, the student teachers were introduced to various online resources for primary and secondary English teaching, such as the British Council's Learn English Kids website, BBC Teach Kids, CBeebies, and Onilo†. Furthermore, they were introduced to Padlet and Learning Apps, which are known to be versatile tools. The student teachers were asked to use digital media in at least one English lesson per school type over the course of the semester where possible. Due to a reported lack of technical equipment, only 11 student teachers were able to fulfil this task:

Table 1: Sampling

Student teacher	**Number of lessons taught including digital media**	**Number of lessons per school type**
Student teacher 1	3	2 Secondary, 1 Primary
Student teacher 2	3	3 Primary
Student teacher 3	1	1 Secondary
Student teacher 4	1	1 Primary
Student teacher 5	1	1 Primary
Student teacher 6	1	1 Primary
Student teacher 7	1	1 Primary
Student teacher 8	3	1 Secondary, 2 Primary
Student teacher 9	7	4 Secondary, 3 Primary

† See application box.

Student teacher 10	5	4 Secondary, 1 Primary
Student teacher 11	8	5 Secondary 3 Primary
Total	**34**	**24 Secondary, 17 Primary**

3.2 Methodology

The student teachers' reflection protocols of the lessons including digital media were analysed for this study. In total, 34 reflections could be examined and analysed according to the principles of Kuckartz' (2014) thematic qualitative content analysis using the software MaxQDA. The aim of this analysis was first to systemically group information from the reflection protocols based on the main categories derived from the reflection questions given to the students. In the next step, these categories were further differentiated inductively into sub-categories and defined. Finally, the categories were analysed based on the method of category-based analysis of the main categories (Kuckartz, 2014, p. 87). The main results will be presented according to the research questions.

4. Findings

The discussion of the findings will be structured according to the frequency of each code in student teachers' reflection protocols, starting from the most mentioned to the least described aspect.

The reflection protocols show that the placement schools provide different levels of technical equipment – some classrooms were scarcely equipped, others provided technical facilities with up-to-date devices and software. The 11 student teachers who were able to teach media-assisted English lessons used the following devices in the sequence of their frequency:

- Laptops provided by the school and private devices (mentioned in 8 reflection protocols)
- Projectors (mentioned in 7 reflection protocols)
- Smart boards (mentioned in 7 reflection protocols)
- Tablets (mentioned in 4 reflection protocols)
- Private mobile phones and pupils' mobile phones (mentioned in 3 reflection protocols)
- Beebots[‡] (mentioned in 2 reflection protocols)
- Computers (mentioned in 1 reflection protocol)

In addition, the student teachers reported using a mixture of tools and apps for teaching their media-assisted English lessons. The following tools and apps were explicitly mentioned in the student teachers' reflections:

- PowerPoint presentations (mentioned in 15 reflection protocols)

[‡] Educational robots which are used to teach children programming.

- Videos (mentioned in 5 reflection protocols)
- Kahoot (mentioned in 5 reflection protocols)
- Live worksheets (mentioned in 3 reflection protocols)
- LearningApps (mentioned in 1 reflection protocol)
- Padlet (mentioned in 1 reflection protocol)

RQ1 Which criteria do student teachers use to choose digital tools for their teaching of English?

Data shows that the student teachers selected digital tools based on various criteria. The majority of the selection criteria were based on both pedagogical and methodological considerations. The most serious selection criterion, mentioned in 5 reflection protocols, is the aim to provide a motivating lesson including engaging and playful ways of learning, as this section from a student teachers' reflection protocol about the considerations for a sensible media use illustrates:

> - Was macht den Schüler*innen Spaß?
> - Wo sind alle Schüler*innen gleichzeitig beteiligt? (8_MS, p. 19. – *What do the pupils find fun? – Where are all pupils involved at the same time?*)

Another criterion, mentioned by two student teachers, is the possibility to integrate the tool well within the content of the planned lesson.

The availability of videos with a suitable language level was mentioned as selection criterion for individual videos in three reflection protocols. This criterion was further defined by the student teachers as videos having appropriate vocabulary difficulty, and further features facilitating understanding like subtitles were mentioned as selection criteria for individual videos in three reflection protocols. One student teacher reports the use of videos with the purpose of providing their pupils with authentic language.

Other selection criteria mentioned by two student teachers are of a practical and organisational nature, e.g. the possibility to project an image rather than having to print it out.

Further reasons reported have to do with the student teachers' own knowledge levels. For instance, one student teacher notes that she chose a tool because she was already familiar with it from university seminars and her own school days:

> Kahoot ist mir aus meiner eigenen Schulzeit und aus den Seminaren an der Hochschule bekannt. (8_MS, p. 19. *I am familiar with Kahoot from my own school time and the seminars at university.*).

In another case, a student teacher was required to use a specific tool by her mentor teacher:

> For the English lessons, our tutor asked us to prepare a PowerPoint to go with our plans so that comparisons with the book could be displayed. (3_MS, p. 10.).

RQ2 What positive and negative experiences did the student teachers have when using the tools?

As described previously, the findings for RQ2 are first presented for the most frequent positive experiences of the student teachers, followed by their major negative experiences.

The majority of the participating student teachers acknowledge advantages that the use of digital media can have for the primary classroom. In 13 reports, the student teachers describe the use of digital media during their lessons as motivating for their pupils, which was highlighted for the area of speaking:

> Die Schüler*innen konnten mit Hilfe der Videos komplett in das Thema eintauchen und haben in der Unterrichtsstunde mehr Englisch gesprochen als sonst. (8_VS_2. *With the help of the video, the pupils could completely immerse themselves in the topic and they also spoke more English than usual*).

A further benefit that is mentioned in 10 reflection protocols is the possibility of checking learning outcomes with some tools, e.g. Kahoot:

> Die Kinder konnten die Vokabeln der Geschichte memorieren. Sie haben die Wörter den Bildern zugeordnet. Die Schüler*innen konnten der Geschichte folgen und haben den Inhalt gut verstanden. Dies wurde durch das Kahoot erkennbar. (9_VS_3. *The children were able to memorise the vocabulary from the story. They matched the words with the pictures. The pupils could follow the story and understood the content well. This became apparent through Kahoot.*).

Another aspect emphasised as positive in 9 reflection protocols is the versatility and flexibility that many online tools have in comparison to print-out material, e.g., being able to edit them for a topic or amending them during a lesson to adapt to the teaching situation.

Other positive comments mainly refer to the use of Power Point, which was more commonly used in the student teachers' secondary English placements with the aim of providing visual guidance throughout the lessons. In five reflection protocols, student teachers mention this tool as being an advantage to help both pupils and teachers orientate themselves within a lesson. Additionally, PowerPoint presentations are described as a helpful way to support the student teachers' lesson planning and time management:

> Although it is quite a lot of work to prepare each week, it does help with the planning stage as it means I can plan each step of the lesson in detail. I also feel like it lets me manage my time more accurately which is definitely a helpful aspect. I, therefore, succeeded in staying true to my plan and my time management (3_MS).

However, the student teachers also mention negative experiences and challenges occurring before or during their lessons.

In particular, the lack of a stable internet connection and outdated technical devices available were mentioned as a challenge in six reflection protocols. This problem occurred at primary as well as secondary schools and led to various disruptions during their teaching, e.g. student teachers and pupils being unable to access games and losing time. The student teachers demonstrated great flexibility and improvisation skills when technical issues occurred, for example by attempting to create a mobile hotspot or using alternatives to the originally planned programme, which was only successful in some cases:

> Da gerade das Internet nicht funktionierte und ich mich nicht auf dem Handy dazu schalten konnte, musste ich eine andere Lösung suchen. Ich habe dann das Quiz in der Bearbeitungsversion hergezeigt und die Kennzeichnung der korrekten Antworten entfernt. Das Wichtigste war, dass die Kinder die Fragen und Antwortmöglichkeiten gesehen haben. Trotzdem konnte das Quiz dann erfolgreich in Gruppen absolviert werden. (9_VS_3, p. 19. *Since the internet was not working and I could not join through my phone, I had to search for a different solution. I then displayed the quiz in the editing mode and removed the mark-up of the correct answers. The most important thing was that the children could see the questions and answers. Despite this, however, the quiz could be completed successfully in the groups*)

Similar issues regarding difficulties accessing presentations and games were reported in eight reflection protocols, due to older versions of programmes on school computers, USB sticks not fitting into the slots of school computers, projections on the smart board not working, and QR codes not functioning. At a school where a student teacher worked with her pupils' private phones and tablets in her lessons, she described that some of them forgot or did not own devices, so she asked them to share with their peers.

Another negative aspect described in three reflection protocols is their own nervousness due to technical issues occurring during their teaching. In some cases, their mentor teachers had to intervene to help. However, student teachers who taught several media-based English lessons were able to overcome these moments of discomfort and remained calm in these situations.

Despite the many comments regarding the lack of technical facilities in classrooms, some student teachers were also positively surprised about getting devices more easily than anticipated:

> Es war einfacher als gedacht an die Tablets zu kommen. Zum Glück habe ich am Vortag noch einmal kontrolliert, dass sie aufgeladen waren. Da ich nicht supplieren musste (die Einheit davor) funktionierte die Vorbereitungszeit sehr gut, sonst wäre ich wahrscheinlich zeitlich sehr ins Schwitzen gekommen" (4_VS, p.8. *It was easier than I thought to get hold of the tablets. Luckily, the day before, I checked again that they were charged. Since I didn't have to do any supply teaching (in the lesson before), the preparation time worked well. Otherwise, I would probably have been tight with time.*).

All of this shows that good preparation is crucial, which many student teachers also acknowledge. Many of them note that the process of preparing the use of digital media in their English lessons well is initially very time-consuming.

4. Conclusion

The present study gives valuable insights into the field of media-based language teaching in primary and secondary teacher education in Austria. Due to the small number of participants, it is nonetheless important to acknowledge some of the limitations when drawing conclusions. Future studies in this field could draw on bigger samples or conduct interviews with student teachers to provide further insights. Another limitation is the fact that the student teachers used digital media in varying degrees, between one and eight lessons per student teacher, and for different learning aims, which results in an unbalanced result about the sample and makes comparison across the 34 lessons difficult. Furthermore, due to the fact that the study only draws on lesson plans and reflection protocols and the actual lessons could not be observed, the results only show one perspective, namely that of the student teachers. To gain further insights into their learning, future studies could also interview mentor teachers or use observation protocols of group supervisors. Taking these limitations into account, the following observations can be drawn from the study.

First, the present study has made it clear that, despite the potential that media-based tools and games have for the primary and secondary language classroom, the technical facilities present at the placement schools posed limitations for the student teachers' lessons. This supports previous observations that technical facilities in Austrian schools need to be strengthened (BMBWF, 2021, p. 339). Notably, the speed and stability of internet connections need improvement, as the current situation does not always allow to successfully use online games and apps in classrooms. Furthermore, it has become clear that computers and other devices provided in many Viennese schools are often outdated and slow, which proposes major challenges even for tech-savvy teachers.

Secondly, the study emphasises the benefits that online-based language learning can have in the primary and secondary EFL classroom. The student teachers report benefits of media-based learning, e.g. being able to check learning outcomes more easily. They also appreciate the versatility and flexibility that some tools offer. Another positive aspect that the student teachers report is increased pupil engagement and motivation, which supports observations by Del-Moralez-Perez et al. (2019, 360-361), Majoral (2018, p. 325), and Gabriel (2016a, p. 18). However, it is important to remind students that digital media is not a motivator in itself (Stockwell and Reinders, 2019, p. 43), and that it always needs to be implemented well within a lesson.

The challenges that the student teachers have faced also show that good preparation is necessary to successfully use digital media in a language classroom, which require time-consuming preparations at the beginning. This highlights the need for teacher education programmes to further include media-based language teaching into their curricula to help future teachers learn to use media in their English lessons effectively.

Application Box

Challenges of teaching EFL with digital media:

- Need for flexibility due to unstable internet connection and/or outdated devices at some schools
- Compatibility of tools prepared at home with school devices
- Initial nervousness due to technical disruptions

Potential of teaching EFL with digital media:

- Potentially increased student engagement
- Easy way of checking learning outcomes
- Flexibility to adapt tools to the learning context
- Orientation within the lesson for students

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