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ORIGINAL RESEARCH PAPER

THE FACILITATION OF DIGITAL LITERACY IN EFL CLASSES

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ABSTRACT

Digital literacy has become an essential form of literacy for the students of the 21st century. This development had been significantly accelerated by the Covid-19 pandemic, when all students in Austria had to switch to distance learning at some point between the years 2020 and 2022. Based on a web-based survey conducted among Austrian EFL students, this paper aims to investigate the current status of digital literacy among 5th and 6th grade EFL students from their perspective. A special focus is placed on students who have received a digital device for e-Learning purposes within the school year 2021/2022.

The following key results were observed: Students have a generally positive attitude towards e-Learning that also shows a connection to their level of digital skills. Furthermore, there are significant differences in experiences and attitudes toward e- Learning based on grade level. Further research into manifold areas of digital literacy could be beneficial in order to gain a deeper understanding of the topic and practical assistance for educators and students.

Keywords: Digital literacy, digital competences, English, EFL, self-assessment, language learning

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1. Introduction

The following paper examines digital literacy in English as a Foreign Language (EFL) classroom, following the introduction of digital devices into Austrian classrooms in 2021.

In 2020, the Austrian Federal Government launched the "Initiative Digitales Lernen" (Initiative Digital Learning), which – among other things - provided students in Austria's 5th and 6th grades with digital devices at a reduced price in the school year 2021/2022. Whether schools took part in this program was decided internally. In consecutive years, the initiative will be continued in future 5th grades. The goal is to establish digital learning in all Austrian schools until 2024, and this is part of an 8-point plan to digitalize schools (Bundesministerium für Bildung, Wissenschaft und Forschung, 2020). This distribution of digital devices accelerated the integration of e-Learning into everyday teaching approaches. While digital competencies were at the center of consideration, digital literacy offers a wider and more holistic picture of skills that are essential in a globalized society.

The present paper discusses the impact of introducing said digital devices into the EFL classroom, the attitude towards e-Learning and the expected advancement of digital skills and the differences in using e-Learning regarding grade level. In order to provide meaningful data for this discussion, a web-based survey was conducted among 151 Austrian EFL learners.

2. Literature review

2.1 e-Learning

E-Learning has become one of the most prevalent terms in the wide range of concepts that describe digital-device-supported learning. It is short for *electronic learning* and therefore combines technology and learning. Aparicio et al. describe technology as serving as "an enabler of the learning process, meaning that technology is used like any other tool in the education praxis, as is a pencil or a notebook, for example." (Aparicio et al., 2016, p.292) However, it is not as simplistic as a pencil since technology includes many dimensions of society and learning. Stemming from Computer Based Training (CBT) and Web Based Training (WBT), e-learning has established itself as an umbrella term that encompasses many aspects of learning that are supported by digital devices (Arnold et al., 2015). Electronically arranged learning media is mostly interactive and allows learners to access content online or in a blended format (a combination of online and offline methods) (Möslein-Tröppner & Bernhard, 2021).

During the Covid-19 pandemic, e-Learning has become the go-to tool to compensate for the inability to gather in large crowds (Dautbašić & Bećirović, 2022) and provide an alternative learning environment for the large number of students quarantined at home. Next to other benefits, self-regulation is one of the most commonly named assets attributed to e-Learning (Bećirović et al., 2022). This self-regulation, however, can be a challenge for students who lack the reflective skills to identify learning gaps. Additionally, the rapid transfer of lessons into an online environment meant that a loss of teaching quality was often observed. Purposeful guidance through these new learning possibilities can, however, result in varied prospects of connecting individual needs to a great diversity of learning styles and methods (Bećirović et al., 2021).

2.2 Digital literacy

School has always been a place of literacy. Literacy, according to Merriam-Webster, is "the quality or state of being literate" (*Literacy*, n.d.). At first glance, it might be defined as the ability to read the language, which was certainly the most common conception of literacy for centuries. The concept of other literacies – apart from writing and reading – is quite young and has only emerged at the end of the 20th century. Apart from other concepts like moral literacy or cultural literacy, computer literacy finally became part of the academic discourse in the 1990s (Collins & Blot, 2003).

A close definition of digital literacy was established by UNESCO in 2011:

"Digital literacy is an umbrella concept for important skill clusters whose names are often used as synonyms; their content, however, is not exactly

the same. ICT literacy refers to a set of user skills that enable active participation in a society where services and cultural offerings are computer-supported and distributed on the internet. Technological literacy (previously called computer literacy) entails a deeper understanding of digital technology and comprises both user and technical computing skills. Information literacy focuses on one of the key aspects of our Knowledge Society: the ability to locate, identify, retrieve, process and use digital information optimally". (Karpati, 2011, p. 2)

Solikhati and Pratolo refer to digital literacy as "the skill to receive information from a digital format"(Solikhati & Pratolo, 2021, p. 2) and Paul Gilster defines it as „[…] a set of skills to access the internet, find, manage and edit digital information; join in communications, and otherwise engage with an online information and communication network. Digital literacy is the ability to properly use and evaluate digital resources, tools and services, and apply It to lifelong learning processes" (Gilster, 1997, p. 220).

Jones and Hafner argue that while "'Literacy' traditionally means the ability to read and write"(Jones & Hafner, 2021, p. 16), true literacy is comprised of "interpersonal and social processes" (Jones & Hafner, 2021, p. 17). They suggest that crucial parts of literacy are social aspects as well as finding, decoding, and interpreting information (Jones & Hafner, 2021).

What is eminent is that all of these definitions do not limit themselves to measurable skills but rather the ability to use and reflect the use of digital resources. Based on these definitions and approaches, digital literacy, therefore, will be regarded as a way to successfully navigate digital media in the context of this paper.

2.3 Measuring digital literacy

If digital literacy is inseparable from social aspects and cannot be broken down into lone digital competencies, what is the benefit in measuring it and is it even possible?

Chetty et al. propose that the G20 create a "comprehensive digital literacy index"(Chetty et al., 2017, p. 12) in order to provide an evidence-based international guidance system that can be utilized by emerging economies as well as established ones. They argue that "Appropriately measuring digital literacy and consistently ensuring that policies are agile enough to react to the dynamic nature of digital skills will lead to productivity gains across the country" (Chetty et al., 2017, p. 11). They suggest to measuring five different sub-groups of literacy: Information, Computer, Media, Communication and Technology. Within these categories, they propose measuring the technical, cognitive and ethical perspectives (Chetty et al., 2017).

In 2018, UNESCO created "A Global Framework of Reference on Digital Literacy Skills", which offers a more global approach to the manifold national and regional developments in the field. UNESCO refers to the 2017 DigComp 2.1 framework, published by the European Union (Carretero et al., 2017) as a foundation for their work. Additionally, UNESCO expanded this competence-based approach by "collecting examples of digital literacy use in everyday contexts in a wide range of countries outside of Europe" (Karpati, 2011, p. 13). UNESCO comes to the conclusion that digital literacy is highly dependent on demography, geography and the specific digital needs of a particular group. Therefore, a framework can be established but has to be adapted according to the specific needs of the country in question.

As of the summer of 2022, there is not a single framework of measuring digital literacy that has become canon among the digitalization community. Research suggests that digital literacy measurement must be adapted to the exact research question proposed and skills or competencies attributed to digital literacy (which is not canonic also).

3. Methodology

3.1 Participants

The examination sample consisted of 151 students from GRG10 Laaerberg Vienna, a grammar school in the tenth district of Vienna, Austria. Participants were selected from grades five and six and were picked based on convenience and access. One class was always polled in its entirety, and no students were polled individually.

Students from both grades received a new digital device in the school year of 2021/2022 and have worked with it in and out of school and in context with their EFL class for at least seven months prior to the conduction of the survey. Grade 5 students received a few (between 1 and 3) introductory lessons into the workings of the devices. Grade 6 students, however, attended an obligatory IKT (Informations- und Kommunikationstechnologie = Information and Communication Technology) class to the extent of one lesson per week.

A total of 6 classes were surveyed, with the whole class participating if present. Thus, there were 69 participants (45,7%) from grade 5 and 82 participants (54,3%) from grade 6. Ages ranged from 10-14 (M=11.59 SD=0.751).

Because of the exceptionally diverse background of the wide range of students, 82 participants (54,3%) stated their nationality as being Austrian, while 69 participants (45,7%) stated their nationality as "Other". Since no other nationality had more than 10 participants per group (McMillan, 2012), all nationalities except "Austrian" were summarized as "Other".

The analysis shows that there were 72 participants (47.7%) that identified as male and 75 participants (49.7%) that identified as female. 4 participants (2,6%) didn't identify with either of those genders.

An almost even number of participants was polled from the 5th and 6th grades (M=5.54, SD=0.5). The distinction was made because they have different backgrounds regarding digital literacy. The fifth graders only received a few introductory lessons on their digital devices. The sixth graders attended a year-long course whose focus was on information and communication technology. Both grades used their digital device for at least one day per week in alternating subjects. The last demographic question of the survey concerned the students' average mark in English. "Average mark" was defined as the marks mostly received in English exams and report cards. The results show that the majority of the students received a positive mark in English (M=2.36, SD=1.13).

3.2 Instruments and Procedures

The survey was conducted as a web-based survey and was created in Google forms. It comprised five parts. The first part of the survey contained demographic questions regarding gender, age, nationality, mother tongue and average grade in English. The results of this demographic part have been laid out in the previous chapter.

The second part was comprised of outline questions regarding the habits of digital device use, such as the type of device, the extent of use and the tools applied in school and at home.

The third part focused on the advantages and disadvantages of e-Learning use in the EFL classroom by letting the participants rate how much they agree with certain statements related to e-Learning use.

The fourth part aimed attention at the students' experience in using e-Learning at school by letting them rate how much they agree with certain statements regarding their daily use of digital devices.

The fifth and final part was a self-assessment scale, with questions about the spread of new technologies, the participants' digital skills levels, their overall estimation of digital skills, the improvement in certain tools, their improvement in their English abilities and their assessment of the use of digital devices in the EFL classroom.

3.3 Data analysis

Because of the amount of data that was gathered, it was crucial to use evaluation software in order to analyze the information properly. There are manifold choices in such software on the market, such as SPSS, Stata or R.

For the sake of this paper, the choice was made to work with SPSS. SPSS is short for Statistical Package for the Social Sciences and is a software that allows advanced analysis methods, significance tests and simple correlation tests (Tausendpfund, 2019). This program was established in the 1960s at the University of Stanford (Braunecker,

2021). The data analysis for this paper was conducted with SPPS-Version 27.

4. Results

4.1 The perceived impact on digital literacy of introducing digital devices in the 5th and 6th grades

The introduction of digital devices into Austria's 5th and 6th grades was part of a bigger initiative to improve digital competencies on a wider scale. The survey conducted among 151 students showed that the students noticed an impact on their digital literacy as well.

Specifically, in the section "Self-assessment" of the survey, students were asked about skills that are often associated with digital literacy. The results have shown that generally, the students mostly observe an increase (37,7%) or significant increase (37,1%) in their digital skills throughout the year. After this general observation, the participants were also questioned on specific skills that attribute to a digital literate user of digital devices by answering "Do you" and "Can you" questions.

The outcome of the "Do you" questions is quite varied but generally shows an understanding of most sections and skills. The question "Do you use keyboard shortcuts" was quite balanced in positive (47,7%) and negative (52,3%) replies. Assuming that a time-efficient way of operating a digital device is a significant part of digital literacy, we can observe that there is still some room to grow for both 5th and 6th graders. Similarly, the question "Do you feel competent in using digital learning resources?" was balanced in positive (51,7%) and negative (48,3%) replies as well. Confidence in the use of digital devices is an essential part of digital literacy. This outcome shows that more has to be done to prepare students and build tenacity in the use of one of the most important resources of the 21st century. The results show that most students can do basic tasks such as changing the computer's screen brightness and contrast (94%) and changing the size of windows on the computer screen (82,8%). However, when it comes to the safety of their device, only 41,1% are able to scan it for viruses. The results for writing files onto a CD, a DVD or a USB Drive were quite balanced, with 55% positive and 45% negative results. An important note regarding this question is that most students were encouraged to save their files onto a cloud service and not to do it locally. 52,3% of students claim to be able to create and update web pages, which seems like a high number based on the level of skill required for the task. However, some students in grade 6 were instructed on how to build a basic website already. Generally, the "Do you" questions (65,6%) and "Can you" questions (73,8%) were answered positively and therefore present a confident picture of digital literacy in the English classroom.

The survey also – unsurprisingly – showed that an overwhelming amount of students use social networks (78,1%). This outcome underlines the importance of preparing young students for their digital life, even if social networks are not legally available to them, as most of them have at least a legal age of 13. It could be argued that by providing the students with messaging services like *MS Teams*, we encourage them to use social networking tools before they are legally able to do it.

When comparing the tools used and the improvement thereof, a clear connection was visible. However, the survey did not show what kind of tools were used in other subjects, and therefore, a correlation cannot reliably be reported.

In conclusion, the research question "What is the perceived impact on digital literacy of introducing digital devices in the 5th and 6th grade? "cannot unambiguously be answered with the results of this survey. Students do see a generally positive impact of the implementation of digital devices in their classroom, and most skills listed seem to reach the majority of students. However, the results show that – naturally – most skills acquired in English class are limited to working with the tools provided by the teacher. Further skills attributed to digital literacy are limited by multiple factors, such as the teacher's competence, time management and resources. In order to gain a more meaningful insight into the true impact of the implementation of digital devices on digital literacy skills, it would be most helpful to conduct similar surveys on an annual basis or conduct the survey among a group of students who did not receive any digital devices

in the schoolyear of 2021/2022. The fact that there is no comparable initiative for improving the digital infrastructure among secondary school students in Austria is both a chance to gain information but also an unprecedented challenge for educators and administrations. As stated before, digital literacy is a complex conglomerate of abilities that is fluid in its level of proficiency. It has been shown that there – currently – isn't a clear-cut examination method that measures digital literacy. It seems sensible to focus, in that sense, on the confidence of students in their abilities to use their digital device and existing and taking part in a digital world.

4.2 Differences in the advancement of digital skills based on attitudes towards e-Learning

The participants were able to work with their new digital devices in English class throughout the preceding eight months. The juxtaposition of the variables associated with attitudes towards e-Learning and the advancement of digital skills showed that there is a clear difference in the approach and outcome. It was shown that an increase in digital skills often occurs together with a positive attitude towards e-Learning. Although most students prefer either an offline or hybrid setting for their English classes, the ones who prefer online English classes also perceived the most gain in their digital skills. The participants who think positively about e-Learning also appeared to gain most in respects to their digital skills. And lastly, students who perceive e-Learning as an enjoyable factor in their learning life also perceived the most gain in their digital skills. Therefore, it must be concluded that there are significant differences in the advancement of digital skills based on attitudes towards e-Learning. Positive attitudes lead to a positive outcome for the students.

In order to be thorough in the analysis of this question, one must pay attention to the fact that the attitude towards e-Learning is certainly subject to change and is influenced by a wide variety of factors that were not explored in this survey. It could be heavily biased depending on the quantity of use or the students' relationship with teachers who regularly use digital devices. Additionally, the quarantine factor cannot be understated. Students were forced to move their education from school into their homes because of the Covid-19 pandemic in 2020 and in subsequent years. The undoubtedly negative association with this era must be kept in mind when observing negative attitudes towards e-Learning. It can be argued that had the Covid-19 pandemic never taken place and the introduction of digital devices proceeded independently of inarguable need and haste, the approaches towards e- Learning would have been different.

4.3 Differences in using e-Learning in EFL class regarding grade level

The juxtaposition of grade level and attitudes on and experiences with e-Learning showed clear distinctions. The results showed that more 5th graders perceived an improvement in their digital skills by using their digital devices in the EFL classroom. The reasons for this might be the different approaches to teaching digital skills to students of different grades. As stated above, 5th graders only received fundamental introductions to their digital devices and the workings of them, whereas 6th graders received a significantly more intense education. This is merely attributed to the fact that there were mandatory lessons held in the 6th grade.

Additionally, the perception of improvement is also dependent on the frequency and method of use in the English classroom. Teachers of this school were instructed on multiple tools and software that contribute to English lessons while working on digital skills and literacy. However, the frequency and intensity of use was not monitored by the administration and certainly has an impact on the results of this question. It would be helpful to evaluate at the end of the school year how often the digital devices were used and if there is a significant difference based on grade level. While the conducted survey cannot offer clear results on why digital devices were used more or less frequently based on grade level, there are multiple factors that contribute to the use of them by EFL teachers. On the one hand, teachers might not use digital devices as frequently in 5th grade because the students have not had much experience with the devices yet, and teachers assume that the use would come with a significant expenditure in time during their lessons to work on technical aspects. On the other hand,

teachers might not use digital devices as frequently in 6th grade because the students have more tests and exams that have to be conducted and therefore, additional work on the devices seems less enticing or even possible.

More 6th graders disagreed that e-Learning makes teaching and learning more flexible. This could be caused by the fact that most classes only had one day a week that was dedicated to working with digital devices. While most 5th grade classes decided upon the day based on which subject teachers were willing and able to work with devices, 6th grade classes decided upon the day based on when their IKT (Informations- und Kommunikationstechnologie) classes were scheduled. This often resulted in less regular use of the devices in other subjects and less flexibility in when the device could be incorporated into the teaching plan in a structured way. Another striking result is the attitude towards the enjoyment of working online. In the question, "I think that e-Learning has made the learning process more enjoyable," one can observe strong positions in both directions (Agree and Disagree).

To sum up, there are significant differences in using e-Learning in EFL class based on grade level. The different initial positions of both grades contributed to that, and further factors would be sensible to explore in further research.

5. Conclusion

After two years of inconsistent learning environments due to the Covid-19 pandemic, the schoolyear 2021/2022 did not hold back in further challenges for both teachers and students. The distribution of digital devices was therefore expected to support the students in providing a more dependable means of social and academic connection. The results of the last few pages have given us insight into many areas of digital literacy from the perspective of 5th and 6th graders but not all provided us with a positive picture that the expectations would suggest.

When asked about the impact on digital literacy that the introduction of digital devices had, students generally conveyed a positive picture as to the digital skills learned throughout the year. However, most students cannot see their English classes fully transitioning into an online setting. It is a probable conclusion that students did not have a positive learning experience during an unprecedented pandemic. Therefore, negative attitudes towards e-Learning are to be expected and logical at this point.

The majority of students notice an increase in their digital skills, and they also generally observe sufficient competencies in various digital areas. However, confidence in digital literacy and in the use of digital devices, in general, seems low for students who have a disproportionately higher experience with working with those devices than peers of their age a few years prior. When it comes to attitudes towards e-Learning, the results also suggest that a positive attitude has a connection to the increase of digital skills of the students. This also shows up in the findings that students who prefer online English classes - in contrast to offline English classes- evidently notice a gain in their digital skills. The motivational factor also should not be disregarded, as students who enjoyed e-Learning likewise experienced a gain in their digital skills. When asked about the use of e-Learning in EFL classes, the analysis of the survey showed that there were significant differences depending on the grade levels. 5th graders show a generally more positive attitude towards e-Learning. As hypothesized above, we suggest that this could be based on two things:

1. 1) 6th graders have to attend a class that is focused on digital competencies. Assigning a class and a mark to a subject often leads to a negative connotation for the students in comparison to a few introductory lessons.

2. 2) 6th graders have experienced the Covid-19 pandemic and the accompanying distance learning regulations in a more pronounced way and might therefore associate it more negatively. 5th graders spent the previous two years in elementary school and mostly worked individually and seldomly took part in e-Learning classes. 6th graders spent two schoolyears in grammar school, which was closed down nationwide but still held classes online.

This survey has shown that digital literacy has been facilitated in both grades, equally among genders and in varied way. Students do not feel extraordinarily competent in their digital literacy skills but notice a significant increase in their competencies. The use of several different tools in the EFL classroom had a positive impact on both English language skills and digital literacy skills.

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