Teaching English through digital exercises: A material package for upper secondary EFL teachers

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Tutkielma on digitaalisiin opetusmenetelmiin pohjautuva materiaalipaketti lukion englannin kielen opettajille. Lisääntyvä digitalisaatio yhteiskunnassa ja digitaalisten taitojen vaadittavuus lukio-opetuksessa on tehnyt digitaalisesta materiaalista entistä yleisempää ja tärkeämpää. Digitaalisten taitojen vaadittavuus on myös lisännyt monilukutaidon, ja siihen liittyvän digilukutaidon tarpeellisuutta. Yhdistyneiden Kansakuntien mukaan moni- ja digilukutaidot on nimetty olennaisiksi taidoiksi kaikille aikuisille vuoteen 2030 mennessä (Antony et al. 2019).

Materiaalipaketin teoreettinen tausta rakentuu monilukutaidon, digilukutaidon ja digitaalisen kielenopetuksen käsitteiden ympärille. Taustoituksessa korostetaan myös opettajan asemaa digitaalisessa kieltenopetuksessa, sekä luokkahuonetta digitaalisen kieltenopetuksen ympäristönä. Digitaaliset oppimisympäristöt tarjoavat monipuolisen lähtökohdan monilukutaidon ja kielen harjoittamiseen, mutta tuovat mahdollisuuksien lisäksi myös haasteita, jotka täytyy ottaa huomioon onnistuneen oppimisen varmistamiseksi. Materiaalipaketin tavoitteena on, että lukion englannin kielen opettajat voivat hyödyntää digitaalisia oppimistehtäviä kieltenopetuksessaan, ja se tarjoaa heille monipuolisia, joustavia ja olennaisia tehtäviä. Tämän tavoitteen saavuttamiseksi materiaalipaketin laatimisessa on noudatettu Opetushallituksen (2022d) ja Saarisen (2020) ohjeita laadukkaasta opetusmateriaalista. Lisäksi materiaalipaketin tehtävät on rakennettu lukion englannin opetukselle olennaisiin teemoihin.

Suunniteltu materiaalipaketti koostuu viidestä eri teemasta: kulttuuri, globalisaatio ja yhteiskunnalliset kysymykset; ympäristö ja kestävä kehitys; terveelliset elämäntavat, ruoka, ja ruokavalio; hyvinvointi ja onnellisuus, sekä identiteetti, perhe ja harrastukset. Nämä teemat on valittu kahden yleisimmän lukion englannin kielen oppikirjan, New Insights ja Elements, teemoista, sekä teemoista, joita painotetaan Lukion opetussuunnitelman perusteissa (2019). Jokaisessa teemasta on kolme tehtävää, jotka harjoittavat monilukutaitoja ja digilukutaitoja. Materiaalipaketti tavoitteena on olla monipuolinen, opetukseen mukautuva ja monikielisyyttä harjoittava kokonaisuus, joka sopii käytettäväksi lukion englannin kielten opettajien erilaisiin opetustarpeisiin.

Asiasanat EFL, digital exercises, material package, general upper secondary school education, multiliteracy, digital language learning,
Säilytyspaikka Jyväskylän yliopisto
Muita tietoja

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1   INTRODUCTION

Digital learning material has become exceedingly more common and necessary in teaching. A variety of digital forms of language learning and teaching have been applied and developed into education together with the Finnish upper secondary schools moving to digital textbooks, exams, and matriculation examinations in 2016 (Kosola 2016). The switch to digital matriculation examination and the enhancement of digital learning material has required utilizing technology and technological tools in teaching more than before (Ekonoja 2014). The need for digital material is also present in the National Core Curriculum (NCC) for General Upper Secondary School Education 2019 (Finnish National Agency for Education 2020a), which advises the use of technology and digital environments in learning, but also emphasizes teaching students to understand technological tools and their appropriate, responsible, and safe use. In a globalizing, digitalizing, and multimedial world, the Finnish curricula emphasize teaching skills needed in study, work, hobbies, and everyday life, called transversal competence (Finnish National Agency for Education 2022a). These skills of transversal competence include multiliteracies, linguistics, and competent use of technological tools, which are also frequently interconnected (Halinen et al. 2015).

Through globalization and digitalization, the way of teaching, learning, communicating, producing, interpreting, and evaluating different texts has changed and diversified. This has created the need to include these skills under the definition of *multiliteracies* (Kupiainen et al. 2015). Different texts in multiliteracies education in Finland mean a variety of objects expressed through verbal, visual, auditory, numeric, and kinesthetic symbols, systems, and combinations of these (Rasi et al. 2019: 98). As a concept, multiliteracies is broad both on the theoretical and practical levels. It includes multimodal skills related to texts mentioned above, but also critical awareness of the relationships between texts, and their connection to cultural contexts and values (Kupiainen et al. 2015). With increased digitization in the world and the educational system, there is a growing need to teach multiliteracy in a digital space, further defined as *digital literacy* (Antony et al. 2019, Bhatt et al. 2014, Jacobs et al. 2014). Digital literacy specifies the concept of multimodal interpretation and utilization of texts to the digital world, with an aim to provide students the skills needed to be digitally literate (Antony et al. 2019). With the internet, completely new types of texts have emerged, reinforcing the need for multiliteracies and digital literacy to be reflected in the learning material (Davies et al. 2021).

Especially after the Covid-19 pandemic in 2020-2022, the availability of digital infrastructure and equipment together with adequate digital competences and skills became more relevant than ever (European Commission n.d.). Due to the Finnish society's investment in education, digitalization, equitable access to internet and technology, as well as the high professional skills of the teachers, the transition to distance education passed smoothly (European Commission 2021, Finnish National Agency for Education 2020b). Distance education improved the digital competence of teachers and students, and new digital learning methods and tools were implemented and familiarized with (Finnish National Agency for Education 2020).

The aforementioned strengths, aims, and developments make digital learning material suitable, current, and necessary for Finnish upper secondary school education. There is also a need for digital language learning (DLL) material, as teachers in both general and vocational level have requested more digital learning material for their teaching (Antony et al. 2019). This thesis provides a digital learning based material package for teachers to use during their in-class lessons in English as foreign language (EFL) education in the Finnish upper secondary school context. In this thesis, digital learning material is defined as material that is available online and takes advantage of digital media elements, such as video, audio, and more varied and interactive tasks. This definition is based on a similar definition by Ekonoja (2014). This material package aims to provide effective, engaging, and relevant digital material for EFL teachers. The themes of the material are based on two EFL book series used in Finnish upper secondary schools, Elements 1-2 and New Insights 1-2, as well as NCC for General Upper Secondary School Education 2019 (Davies et al. 2021, Finnish National Agency for Education 2020, Karapalo et al. 2022). By using book series that are most commonly used in Finnish upper secondary schools, the material will be easily applicable and relevant for the upper secondary EFL teachers to apply to lesson plans and learning goals.

In addition to these aims and objectives, there was a personal objective I wanted to achieve during the process of creating this material package. My aim was to enhance my own understanding of digital language learning exercises, find new platforms for digital exercises, and create exercises that I would also like to use in my future career as an EFL teacher. My interest in digital learning exercises had already grown throughout the years through using

them in teaching foreign language classes, especially during the Covid-19 pandemic. The final push came from reading Kessler's (2018) article on growing use of technology and technological innovation in the field of EFL, and how twenty-first century teachers should prepare to incorporate these technologies into the language classroom. As a result, this material package not only strives to meet the educational objectives of promoting language learning and developing key skills, but it also represents a personal journey of growth and exploration as a teacher in the digital age.

This thesis consists of four chapters. The first one introduces the basis of digital teaching and learning through the background of multiliteracies and digital literacy in EFL education. The second chapter focuses on the relevant research of digital language learning through themes of digital learning, different forms of technology-assisted language learning, the teacher's perspective, technology-mediated learning in the classroom, and digital learning material. The theoretical background is followed by the framework of the material package, which further defines the pedagogical and structural aims of the package. The last chapter, analysis and conclusion, focuses on the process and the end product of the material package through analysis and reflection in the view of the theoretical background. The material package itself is linked to the appendix.

2 DIGITAL LITERACY IN FINNISH FOREIGN LANGUAGE EDUCATION

Multiliteracies and its digital realm forms the base for integrating technology into education in Finland. This chapter discusses the concept and background of multiliteracies, and especially digital literacy in Finnish upper secondary schools through the NCC for General Upper Secondary Education 2019 (Finnish National Agency for Education 2020a), as well as goals set by the European Commission and United Nations. The later part of the chapter focuses on digital literacy in EFL education and the role of English in digital literacy teaching and learning.

2.1 Multiliteracies and digital literacy competences

Multiliteracies is a multidimensional concept, referring to production and interpretation of various texts, as well as critical awareness of the relationships between texts, and their connection to cultural contexts and values (Kupiainen et al. 2015). Competence of multiliteracies was introduced to Finnish formal education in 2016 in order to enhance the students' skills and competence in interpreting and producing various kinds of texts (Finnish National Agency for Education 2016, Halinen et al. 2015). Competence in the NCC consists of cognitive, skill-based, and affective components that include knowledge, skills, attitudes, values, and ethics (Rasi et al. 2019: 97). With information being increasingly produced in a variety of multimodal forms, including digital, numerical, and audio forms, as well as a combination of these, the need for education of multiliteracies is apparent (Halinen et al. 2015). The New London Group (2000) introduced the concept of multiliteracies, based on the changes of language use in working, public, and personal lives, calling for literacy pedagogy to account for a new variety of text forms in a more culturally, linguistically, and globally diverse world. This has created part of the foundation in which dimensions of multiliteracies are based on in Finnish education (see Fig. 1): multimodality; multiculturalism and multilingualism; multimediality; and situationality (Finnish National Agency for Education 2022b, Tarnanen 2019). These dimensions are connected to different skills of interpretation, production, critical awareness, and evaluation, which help students to understand diverse forms of communication and support their identity building (National Agency for Education 2022b, Norrena 2013).
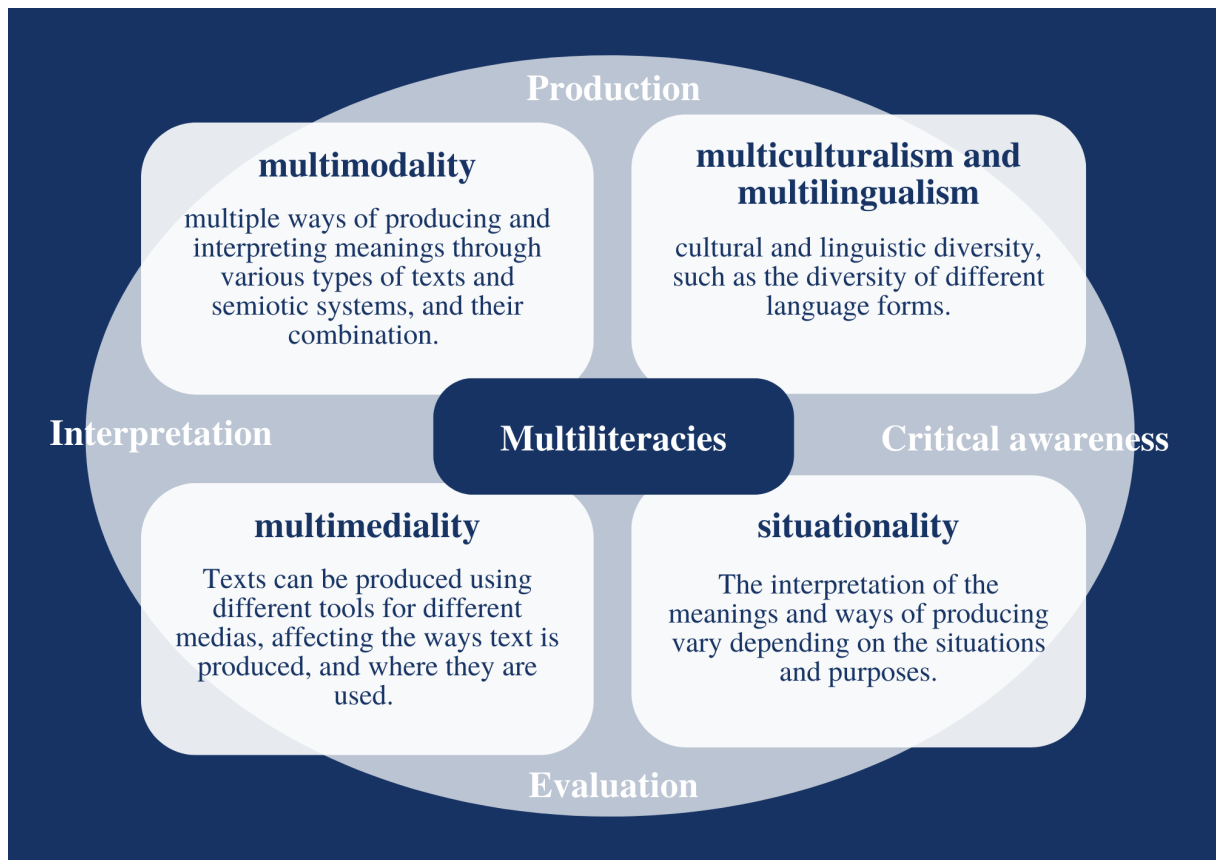
Figure 1 Multiliteracies (adapted from Tarnanen 2019).

The goal of teaching multiliteracies is to develop students' literacy beyond reading and writing to meaning-making activities (Saikkonen and Kaarakainen 2021). This includes critical thinking skills, learning skills, production, presentation, interpretation, as well as teaching the students to positively influence the diverse multicultural world around them (Liang and Lim 2021, Rasi et al. 2019, Saikkonen and Kaarakainen 2021). These are all important skills for the twenty-first century citizen not only in the context of education or work, but also in social interaction in general and in everyday affairs. The aim of the NCC is to enhance skills of multiliteracies throughout the academic journey and the goals in general upper secondary education focus on aspects such as formal, complex, and conceptual texts in civic, academic, and working life; as well as cultural and critical literacy (Finnish National Agency for Education 2022a). As aspects of multiliteracy become increasingly digitally transmitted with technological development and fast digitalization, so grows the need for digital literacy. Digital literacy skills include being able to produce and transmit information

online, or to evaluate the reliability and usefulness of the retrieved information (Jacobs et al. 2014, Rasi et al. 2019, Saikkonen and Kaarakainen 2021). The competence of digital literacy is described by Tour (2020: 3):

> To be digitally literate means to have a rich repertoire of skills, knowledge, understandings, and ways of thinking needed to interpret, manage, share, and create meanings in a wide range of digital channels, for different purposes, in various contexts, and with different audiences

In an educational context, it is important to bridge the gap between competence of multiliteracies in traditional school environments and using traditional media, and literacies in digital environments that students can also bring outside of the school environment, such as social media or digital technology (Liang and Lim 2021, Rasi et al. 2019). The more advanced digital applications become in the future, the more digital literacy and competent use of technological tools will be needed (Saikkonen and Kaarakainen 2021). Digital tools change on average every two or three years, making working in digital environments variable, flexible, and a subject to constant learning (Hobbs 2017, Kaarakainen and Kaarakainen 2018). With the never-ending evolution of digital environments, literacy is evolving to an ability to use a combination of new technologies and new social practices that do not yet exist (Kaarakainen and Kaarakainen 2018: 1).

The importance of digital literacy has also been recognized by intergovernmental organizations who affect education in Finland. The United Nations' Global Goals and the 2030 Agenda for Sustainable Development's goal is to increase the number of youth and adults with relevant skills by 2030 (United Nations 2017). The Finnish government has committed to reach and promote these goals both internally and internationally (Ministry of Foreign Affairs of Finland 2017). The Nordic Network for Adult Learning working under the United Nations considers basic digital skills as relevant skills for 16-65 year olds, defining them as the required problem-solving skills in a digital environment (Antony et al. 2019). These basic skills include information retrieval; communication skills; practical skills of utilizing technology, communication tools and networks; and the competence to perform tasks related to everyday life, work, and social settings (Antony et al. 2019: 14). The European Commission's Digital Education Action Plan also emphasizes the importance of digital literacy in the present and the future (European Commission n.d.). Digital literacy is not only necessary in the context of future learning, careers, and economical competitiveness,

but the digital world also requires critical thinking skills and knowledge to handle the rapidly changing landscape (European Commission n.d.). The increase in disinformation online makes identifying fake information, managing information overload, and navigating safety online the top three digital literacy skills needed for the twenty-first century (European Commission n.d.). Adequate digital literacy skills have become crucial through the influence of the internet and digital literacy skills such as the ability to identify, measure, and analyze new information are now necessary for both teachers and students alike (Alakrash and Abdul Razak 2021: 3). Digital literacy, along with other transversal skills, are now included in the NCC in all stages of education, and are also reflected in the provided learning material (Finnish National Agency for Education 2020, Kosola 2016).

2.2 Multiliteracies and digital literacy skills in EFL teaching

When talking about digital literacy skills in EFL teaching, it is important to explore why it has been necessary to implement them to the NCC, and how students and teachers are affected by their inclusion. The importance of English in today's technology-mediated world is tremendous, it being the *lingua franca* of the twenty-first century and the language of technology (Alakrash and Abdul Razak 2021, Brosch 2015). To be able to communicate, read, and write in English in digital spaces, students inevitably need adequate and diverse repertoires of digital literacy (Alakrash and Abdul Razak 2021, Tour 2020). The necessity to use EFL in technology-mediated environments is a challenge that requires teachers to understand both EFL teaching and technology-mediated environments to offer support to students in productive and successful digital communication (Chapelle 2019). Technologically-mediated communication is not uniform, and cannot be clearly divided into strict genres (Kern 2014 cited in Chapelle 2019: 590). That is why it is especially important to understand and teach how various digital spaces and social contexts shape language and its use (Tour 2020). It is necessary for a multiliterate student to learn adequate language awareness, which is defined as knowledge about language, its proficient use, and pedagogical practices related to language teaching and learning (Finnish National Agency for Education 2022c, García 2017, Halinen et al. 2015). In EFL teaching this means, for example, learning to identify and analyze typical characteristics of different text types in English, and using language in different contexts, such as everyday language or corporate language (Finnish National Agency for Education 2022c). The multimodal, multifunctional, and multipurpose

nature of digitally mediated communication offers a variety of unique ways to apply digital literacy skills and language awareness in EFL learning (Lotherington and Jenson, 2011).

Digital literacy skills in EFL are not only necessary to succeed in a global society, or useful in everyday digital environments, but also empower students and motivate them in their learning. According to Tour (2020), the goal of digital literacies in foreign language education is to raise students' confidence and capabilities in interpreting and producing relevant meanings in the foreign language across a variety of digital spaces, situations and contexts, as well as to develop critical literacy skills. Tour (2020:6) explains that students can be empowered by teaching how they can be "positioned in digital practices and manipulated by texts as well as how they can manipulate language and technology for their own advantage". This empowerment is nevertheless dependent on the teacher's ability to effectively teach digital literacy skills, which is further discussed in Chapter 3.2.

To summarize, goals set by the NCC, the United Nations, and the European Commission require the implementation of digital literacy skills into Finnish upper secondary education as a part of necessary skills required for the students and workers of the future. These skills are necessary to carry out and succeed in life in the rapidly changing, developing and digitizing world. English has a unique and important role in teaching digital literacy, as the *lingua franca* and a language of technology. English is required to utilize, analyze, and communicate in digital spaces, and adequate digital literacy skills offer possibilities for further acquisition of language and linguistic skills, and is a source of empowerment in a digital world.

3   DIGITAL LANGUAGE LEARNING

Digital language learning (DLL) as an educational practice broadly refers to digital technology-based or technologically enhanced language learning using digital tools or practices (Li and Lan 2021). Many aspects of digital language learning are based on, or are similar with general technology-mediated learning. Thus, it is important to first introduce the research and methodology of digital learning in general. Because the way language is being taught has changed through the impact and implementation of technology in everyday lives (Tafazoli et al. 2019), the subsequent chapter focuses on the technological innovations in the field of DLL. This is followed by taking the teacher's perspective: what is needed from the teacher, and how and why teachers apply technology into their teaching. As the thesis develops digital learning material for classrooms, the chapter also focuses on DLL in classroom-specific use. The last part of the chapter is devoted to discussing the use of digital language learning material.

3.1 Digital learning

Digital learning, also called *digital pedagogy* or *e-learning*, has been defined in various ways. Mainly digital learning is defined as the application of technology to learning and teaching processes with the purpose of effectively supporting the processes with collaborative, distributed, student-centered, and open learning techniques (Carrier 2017, Hirsch 2012, Lewin et al. 2018, Smith et al. 2020). Technology has been implemented into teaching and learning vastly, with new types of digital technology or pedagogical applications being developed rapidly to offer more varied and current activity types for learners in and out of the classroom (Carrier and Nye 2017). However, technology in education is not a new phenomenon, as technology has already been implemented in educational history with film, radio and television (Kaufmann et al. 2017). The evolution of digital technology requires teachers to keep developing their approaches in order to offer the appropriate and necessary digital literacy skills for students (Gierhart and Seglem 2021). This is also emphasized by Kaufmann et al. (2017: 149):

the evolution of technological learning tools in the classroom is more than just a change from using chalkboards to whiteboards to smart boards, it also encompasses how educators access the technology and provide their students with skills necessary for digital literacy.

Indeed, Carrier and Nye (2017: 209) argue that instead of technology, it is the pedagogy attached to it that interests teachers and learners who pursue the most successful outcomes. The field of digital learning is surrounded by a variety of approaches to technology-implemented teaching divided by how, when, and what technologies are used. To stay on focus, this thesis will discuss the theories of the field which are the most appropriate for the thesis.

Digital learning is combined with theoretical models, some in purpose to guide teachers to develop theoretical understanding of their digital practice (Carrier 2017). One current model is the Technological Pedagogical Content Knowledge model (TPCK) that combines pedagogical, content, and technology knowledge, and emphasizes that proficient teaching requires understanding all of the three elements (Carrier 2017, Kaufmann et al. 2017). Other notable models are SAMR and UTAUT. SAMR stands for Substitution, Augmentation, Modification, and Redefinition and is a model devised as a tool to help educators integrate technology into teaching with increasing pedagogical focus. UTAUT (Unified Theory of Acceptance and Use of Technology) is a model for measuring how users accept or reject technology and focuses on how teachers and students react to educational technology (Carrier 2017: 6). These theoretical models have been criticized for example by Gierhart and Seglem (2021: 2), who argue that TPCK and other knowledge-based conceptualizations of digital pedagogy fail to take into account the holistic perspectives to teaching, for example the teacher's challenges in implementing technology for diverse learners in student-centered ways. According to Giehart and Seglem (2021), teaching is a combination of working in different contexts and in collaboration with colleagues and students: it does not happen in isolation but rather evolves through a dialogue between principles and norms developed through career and life journeys.

3.2 Different forms of technology-assisted language learning

The digital tools, techniques, methodologies and activities used in language teaching are referred to and connected with umbrella terms such as Computer-Assisted Language Learning

(CALL), or Technology Enhanced Language Learning (TELL). CALL is defined as progress in language learning by learner's use of a computer (Beatty 2010 cited in Tafazoli et al. 2019: 30). CALL is not a new phenomenon but has been a part of DLL from the 1980s forward (Carrier and Nye 2017). From the 1980s, multiple theoretical frameworks have been part of CALL from learning styles and strategies to learner's characteristics and autonomy (Akayoglu 2019). There has been a constant focus on learning through social interaction based on social constructivism, development by social and cultural interaction based on sociocultural theory, as well as developing language through interaction (Akayoglu 2019). During the last decade CALL has also shifted its focus to collaborative engagement and student-centered learning, as well as to theoretical models such as TPACK (Akayoglu 2019). Li and Lan (2021) argue that the term CALL is often used when discussing technology-based language learning, however inaccurately, as with this field's rapid development new technologies in language learning emerge outside of the computer, such as mobile devices or social media.

MALL or Mobile Assisted Language Learning uses mobile technology for instructional purposes either through self-motivated or instructor directed approach, for example by note taking, recording language use, communicating in a native environment, information retrieval, or accessing course material (Kaufmann et al. 2017). The number of smartphones and tablets, as well as accessibility to them, has already increased in the classroom, with growing availability of potential, useful, language-providing, and motivating apps and software to support language learning in the classroom (Carrier 2017, Hockly and Dudeney 2017). Hockly and Dudeney (2017) consider mobile devices as a permanent part of the future of DLL, as they are integrated deeply in everyday life. With the familiar, compact, powerful, and portable device, ESL learners can acquire language inside and outside of the classroom, and many learners and teachers consider mobile devices a popular choice for technology use in the classroom (Kaufmann et al. 2017).

Social Media Assisted Language Learning (SMALL) focuses on language learning through collaboration and community based technological systems (Kaufmann et al. 2017). The definition of social media is constantly changing with the emergence of new kinds of social media platforms (Kaufmannn et al. 2017). As new social media platforms become popular, so become new forms of text types, which makes social media an essential aspect to take into

account in DLL (Kaufmann et al. 2017). Social media platforms can be used to reinforce classroom content or to practice multiliteracy and digital literacy, for example by using up-to-date news, professional presence, metadata, statistics, or communicational activities (Kaufmann et al. 2017, Rasi et al. 2019). Using social media has a great potential for developing language awareness and communication practice, with increased confidence, participation, and motivation in L2 communication among learners (Kaufmann et al. 2017, Sharma 2019). On the other hand, anonymity and social nature that characterize social media can turn into quicksand, as teachers need to pay attention to the possibilities of bullying, off-topic discussions, and the spread of personal information in and through it (Kaufmann et al. 2017: 156, Rasi et al. 2019). Incorporating social media should thus be done warily with a strict plan to ensure effective learning (Kaufmann et al. 2017).

New technologies, such as Artificial Intelligence (AI) and big data will also impact DLL teaching and learning in the future, for example through their impact in future work, environmentalism, and human behavior (Li and Lan 2021). AI and big data encompass learning analytics that analyze, measure and tailor learning to students through the collection of large amounts of data (Hockly and Dudeney 2017). The European Commission's (n.d.) Digital Education Action Plan for years 2021-2027 highlights AI as an emerging technology for delivering new types of educational content, and promotes the importance of acquiring basic understanding of AI technology for confident, critical, and safe use of it. Implementation of AI offers learners support, while automating some of the teachers' responsibilities. However, this does not replace teachers but rather increases their importance, given that teachers acquire higher levels of literacy and skills using it to support learning (Saville 2017).

3.3 Teachers' use of technology in teaching and learning

Teachers are in a constant shuffle or research, teaching, faculty obligations, and engaging with peers. This causes an atmosphere, where incorporating new technologies into the classroom to replace the familiar methods and content requires a lot of effort, possibly resulting in confusion and teachers feeling overwhelmed by the vast new technology options that are marketed and available (Carrier and Nye 2017, Strawser et al. 2017). The administration's integration of technology into schools has increased the pressure for the

teachers, who are expected to have the knowledge in the appropriate use of them, as well as the knowledge to instruct students on how to use them (Kaufmann et al. 2017). Though this expectation has been embraced, it is also met with caution and concern (ibid.). With constant advancements in technology, finding the balance for choosing, using, implementing and instructing technology requires constant work from the teachers (ibid.). As more technologies enter the classroom, choosing and using technology seems to become more convoluted, which emphasizes the importance of theoretical framework and research to guide towards successful use of technology in a classroom (ibid.). Increase in educational technology and digital learning means that to be implemented successfully, teachers need skills, competencies, and awareness of theories, practices and tools of digital learning (Carrier and Nye 2017). This also includes access to training and development, and the opportunity to share their knowledge with each other (Carrier and Nye 2017). Anthony et al. (2019: 49) found that teachers are in need of more technical and pedagogical support, and teachers in both general and vocational education have requested more digital learning material. With the field of digital learning rapidly growing and developing, digital technology and pedagogical applications are here to stay, and it will be the responsibility of teachers to evaluate, modify, engage, and adapt with it (Carrier and Nye 2017: 220).

Incorporating digital tools for education just for technology's sake should not be enough for teachers, but rather digital tools should be applied according to the instructional rationale (Aguilar 2012, Kaufmann et al. 2017). The way in which teachers are able to adapt necessary and current digital material and tools into their teaching also affects the learners' proficiency and attitude towards digital tools and methods in teaching (Aguilar 2012, Antony et al. 2019). The teacher's use of digital tools and their level of digital literacy competence has been identified as the single most important factor that can contribute to the students' learning of future digital skills (Norrena 2013). Educators have a crucial role in teaching critical thinking in the digital environments, and raising awareness related to emerging technologies including ethics, environmental sustainability, data protection, children's rights, discrimination, and bias towards gender, disabilities, as well as ethnic and racial discrimination (European Commission n.d.).

In the Finnish educational system, teachers have an important role as active participants in designing the local curricula, as well as learning environments, both physical and digital

(Lavonen and Salmela-Aro 2022). With only few formal requirements for digital competences for teachers at the Nordic level, it is considered a possible weakness in digital literacy education (Antony et al. 2019: 15). On the other hand, Finland has high rankings in digital skills, literacy proficiency and digital equality (Antony et al. 2019). Furthermore, though students who grew up using technology might have been viewed as more 'technologically-savvy' or more fluent in the digital language than their teachers, even considered as "digital natives", this view has been widely criticized (Alakrash and Abdul Razak 2021, Bennett et al. 2008, Smith et al. 2020). Studies have proven that students can lack crucial digital knowledge and -skills, while teachers might actually possess greater digital literacy skills than students who grew up using technology (Alakrash and Abdul Razak 2021, Smith et al. 2020). One generations' technology use is not universal and varies based on multiple factors, such as socioeconomic status, level of education, level of access, or personal interests (Bennett et al. 2008, Hockly and Dudeney 2017). It is up to the teacher and the school administration to bridge the gap between students' existing technological competencies and digital access, to enhance digital literacy skills in language learning, and to promote healthy balance and positive interaction in digital spaces (Alakrash and Abdul Razak 2021, Cambridge Language Assessment n.d., Liang and Lim 2021). Applying technology into EFL teaching can inspire and motivate learners, support and improve learning, and provide equality and support in teaching (Cambridge Language Assessment n.d.). If not applied properly, the learners' difficulty in interacting with the tools can cause problems in mood, behavior and their ability to learn (Cambridge Language Assessment n.d.). DLL environments are challenging for traditional evaluation, and can rely heavily on students' self-regulation, -directing, and -reflecting, as well as their individual preferences (Li and Lan 2021). For example, Lintunen et al. (2017: 72) identified three digital learning profiles present in a Finnish language classroom:

1) Digital learners, who are heavy users of the internet and especially social media. These learners have a positive attitude towards using technology in learning.
2) Hybrid learners, who are active users of digital environments, but are critical towards excessive use of technology. These learners want to keep most of the technology use and learning separate.

3) In-school-learners, who use digital technologies but prefer traditional learning methods, such as pen and paper. These learners do not believe in technology facilitating the learning process.

The variation in preferences among the three types of learners affirms the diversity in digital learning in a generation that has grown up with digital tools and the internet (Lintunen et al. 2017). And even though a number of students would prefer to keep technology and learning separate, teachers are still tasked to teach students the multiliteracy and digital literacy skills necessary to succeed not only in school, but also in the future. It is the teacher's responsibility to support the learners, foster an atmosphere of acceptance, and engage in dialogue about the technology-mediated DLL to create valuable teaching opportunities and positive learning experiences (Kaufman et al. 2017).

3.4 Classroom as a technology-mediated learning environment

To further define technology use in the classroom, it is necessary to establish the concept of blended learning. Blended learning combines traditional face-to-face instruction with computer mediated instruction (Banditvilai 2016, Li and Chiu 2017). Blended learning in education has been defined in a variety of ways from the amount of technology used in the classroom to models of distance and physical education, as well as a combination of these (Aguilar 2012). This thesis uses the definition of blended learning where physical face-to-face teaching is combined with using digitally mediated material in the classroom. In this view blended learning requires the physical presence of the teacher and the students while combining online environment and digital media, aiming for the two delivery methods to complement each other (Banditvilai 2016). It is not a new phenomenon to include blended learning in education, as the technology-mediated lives of teachers and students naturally cause mixing of digital and traditional methods in teaching (Aguilar 2012, Chapelle 2019). Blended learning is beneficial to education as it improves teaching and learning by making it more effective (see i.e. Garrison and Kanuka 2004, Singh and Reed 2001, and Bernard et al. 2014), as well as offering teachers more (inter)active experience with students (Aguilar 2012). Teachers are instructed to be the mediators and examples in the blended environment to help students learn languages in a self-directed, creative, communicative, and collaborative manner (Cambridge Language Assessment n.d.). Blended learning's approach to teaching

also offers versatility in the learning material, as utilizing a variety of digital devices or platforms in teaching enhances the access to other learning media outside of the physical classroom (Alipour 2020). The European Commission (n.d.) has also recommended the development of blended learning to all levels of education and to draw on lessons learned from the Covid-19 pandemic. This recommendation is based on offering long-term, high-quality, flexible, and inclusive education, ranging from pedagogical methods and technological tools to learner needs and changing circumstances (European Commission n.d.).

Technology use in the classroom is not only a tool for providing information, but a cognitive addition to support learning, to provide an example for future technology use, and to build skills needed for a prosperous future (Kaufmann et al. 2017). Implementing digital technologies in teaching is effective as it makes content and processes clear, streamline, and engaging, and offers students necessary practice in digital literacy skills (Gierhart and Seglem 2021). Digital technologies enable students to learn contents more quickly and thoroughly and connect theory and practice more proficiently (Carrier 2017: 1). For teachers, digital technologies improve instructional techniques, and reduce the time needed for creating teaching material (Carrier 2017: 1). Incorporating DLL technology into the lessons also shows positive changes in students' learning outcomes through creating possibilities for both formal and informal learning, extended learning spaces, promoting motivation, enhancing communicative learning, developing multimodal learning, and providing authentic learning material (Carrier 2017, Li and Lan 2021, Mehring 2017). Digital learning and technology also promote equality by increasing access to learning opportunities, the ubiquity of technology, sustainability in learning, and support in developing independent learning skills (Carrier and Nye 2017).

With this student-centered approach to teaching, it is also important to remember that students might not have the means or skills necessary to use technology, or they are unfamiliar with the tools or their appropriate use (Kaufman et al. 2017). It is, then, up to the teacher to offer technological support to the students and to create an environment of acceptance, encouragement, reflection, and positive learning (Kaufman et al. 2017). For example, Vinogradova (2017) showcased how the students' concerns and hesitations of their technology knowledge subsided after they started working with the technology, paired with

the promise of support from teachers and classmates for feedback and technological support. Technology creates opportunities for learning language not only as a system, but as literacies connected to specific situations. Students can also bring their digital practices and ways to communicate through digital technologies into the classroom, making it a more fluid space where different practices coexist and exchange with learning from outside the classroom (de Groot 2017: 26). Embracing the empowerment in digital practices in EFL is also declared by Ronan (2017: 102):

> The ultimate goal of English academic literacy and language instruction in schools is to empower students. What better way to do so than to put the tools of the digital present and future in their hands?

3.5 Digital learning material

The need to promote digital literacy competence is one of the main reasons for increased digital learning material in the classroom (Håkansson Lindqvist 2019). Digital learning material or e-learning material is defined as learning material created in a digital form (Sariyatun et al. 2021, University of Chester 2016: 37). However, digital learning material is not just tools for mediating content, but mediums for teaching underlying norms, values, meanings, and roles affecting and being affected by surrounding society (Fuchs and Bock 2018, Gray 2013, Macgilchrist 2018). Changes in all areas of technology access and opportunity: hardware, software, and pedagogy, have expanded the range of learning material available for students and teachers (Chapelle 2019). Digital technology is implemented into learning material to offer more interactive, interesting, affordable, understandable, and functional possibilities compared to printed learning material (Finnish National Agency for Education 2022, Sariyatun et al. 2021). Chapelle (2019: 576) illustrates that "one type of task is not replaced by another, instead, task types are added, reconfigured, combined, and reinvented to create an ever-expanding repertoire". Digital learning materials have become valuable tools to enhance learning and teaching in both in-class and out-of-class environments (Karademir et al. 2021).

Digital learning material has become more necessary and common in Finnish General Upper Secondary Schools (Ekonoja 2014, Rasi et al. 2019). The switch to digital matriculation

examination and digital textbooks has required utilizing digital learning materials into teaching more than before (Ekonoja 2014). Due to an extension in compulsory education to end at the age of 18, learning material became free of charge for upper secondary schools (Ministry of Education and Culture 2021), which reflected in the publishing field's overall sales for upper secondary schools learning material growing, the sales of digital material almost doubling in 2021 (Finnish Publishers Association 2022). Digital learning material also comprised 78% of learning material sales in 2022 (Finnish Publishers Association 2022). The Covid-19 pandemic also rapidly accelerated the production and implementation of digital resources (European Commission n.d.). The preparedness of students to use digital learning material has increased after the pandemic, making the adaptation of digital materials in the classroom more successful (Håkansson Lindqvist 2019, Lavonen and Salmela-Aro 2022). Currently, digital learning materials are used to help present colorful, interesting, and engaging content, to implement interactive and effective activities, to give feedback to students, and to connect students to authentic cultural communication (Chapelle 2019, Karademir et al. 2019). Especially in EFL education, a variety of authentic content can be attached to digital learning material in the form of videos, podcasts, social media posts, news articles, and many more ways (Alakrash and Abdul Razak 2021). Through interacting with digital tools and applications, students also have an opportunity to practice EFL in conjunction with developing their digital literacy skills, as English as a language of technology is the standard for many digital tools available for digital learning material (Alakrash and Abdul Razak 2021, Brosch 2015). Digital learning material offers students experience in and examples of utilizing and navigating digital spaces in and outside the classroom, as well as in their future (Kaufmann et al. 2017). Simultaneously, digital learning materials provide teachers with a chance to inspire students and open a conversation about the best practices to navigate digital spaces responsibly (Kaufmann et al. 2017). As access to technology grows in all aspects of the society, the stronger and more accepted the role of technology and the tendency to use all types of digital learning material becomes in classroom teaching (Chapelle 2019, Sariyatun et al. 2021).

The existence and acceptance of digital material is not enough, the material must also be effective and successful. The implementation of digital learning material to the classroom must be done appropriately and with relevant function in mind, or the teacher risks negative effects in learning outcomes. Especially material requiring constant self-directed practices has

a greater risk in decreased learning and growing inequalities in learning among adolescents (Saarinen 2020). Digital learning material might also impose a severe strain on working memory in adolescents if it requires excessive multi-tasking, weakening performance in subjects like scientific literacy, reading literacy, and collaborative problem-solving (Saarinen et al. 2021). These risks need to be met by the teacher (i.e. frequent guidance, clear feedback and effective discipline), the environment (i.e. promoting safety, stability of working space, and clear rules), as well as the material (i.e. offering back trackable instructions, instructing in a steady pace) (Saarinen 2020).

According to Saarinen (2020), optimally presented learning material would be easily accessible, the key concepts clearly presented in steps, and free of distractions such as colorful pictures or animations. Finnish National Agency for Education (2022d) also defines four characteristics that are considered ideal for digital learning material: supporting community learning and working together; supporting learning skills; supporting active attitude towards the subject; and offering challenging, open, and authentic tasks. All the possible characteristics cannot be attached to one learning material, but the learning material can support some activities better than others, or the learning material can be intended for a certain type of learning (ibid.). In practice, these characteristics encourage to develop tasks that include, for example, group work, self-assessment, analysis, comparison, reflecting, and practical approach (ibid.). Overall, the material should not be too complicated, or technically too demanding, but meaningful, relevant both in implementation and visuality, functional, and whole in central content (ibid.).

To summarize the chapter, the rapid development and implementation of digital learning or digital pedagogy brings new technologies, practices, and tools to the EFL classroom with the potential to provide students with a multitude of opportunities to improve digital language learning. This includes a variety of activity types for the proficient language learning, as well as improving the digital literacy skills needed for building the future generation of technology users. This implementation requires competences, effort, awareness of theories and practices, as well as tools of digital learning from the teacher, including their access to training and development (Carrier and Nye 2017, Starwser et al. 2017). Teachers can feel overwhelmed by the abundance of educational technology and ways to incorporate digital learning to their teaching, but to combat stationary position to teaching and learning, teachers should gather

resources from collaboration, theoretical models, and frameworks to ensure building a successful future for the students (Carrier and Nye 2017, Hockly and Dudeney 2017, Kaufmann et al. 2017). Teachers are responsible for adapting DLL to fit their teaching style, students' needs, and acquisition of digital literacy skills needed for the technology-filled future. Digital learning material's growing importance in education is driven by these requirements. Compared to traditional material, digital learning material offers interactive, affordable, and functional possibilities for enhancing learner experiences. To be effective and successful, digital learning material needs to be appropriately and relevantly implemented from the teacher's, the environment's, and the material's perspective. With ideal learning material and instruction, students and their learning outcomes would be supported without the risk of becoming distracted (i.e. by social media, unnecessary material, or irrelevant social discussions), not being able to access information, or rising inequalities through constant self-directed learning (Saarinen 2020).

4   FRAMEWORK OF THE MATERIAL PACKAGE

4.1 Aims and background for the material package

The aim of this material package is to provide Finnish upper secondary EFL teachers with versatile, flexible, and relevant digital teaching material for their in-class teaching. The background of the material package concentrates on the necessity of multiliteracy and digital literacy in EFL education, and focuses on relevant themes in Finnish upper secondary school EFL learning. The package aims to support teachers by focusing on the themes and guidelines presented in the NCC for General Upper Secondary Educations 2019 (Finnish National Agency for Education 2020a), and by providing exercises that have pre-planned time frames, working forms, and versatile platforms. This design will make the material easy to edit and adapt into existing lesson plans and different types of classrooms. The material also aims to provide engaging, relevant, and challenging exercises for the students. The digital material is designed according to the support of current research in digital language learning by providing exercises in a variety of technologies, and with pedagogical focus to support the EFL teacher. The exercises are intended to be most suitable for Finnish upper secondary school education, and for learners between B1 and C1 level of EFL proficiency.

The themes in the material package mostly follow the themes of two major upper secondary book series, Elements and New Insights, more specifically Elements 1-2 and New Insights 1-2 (Davies et al. 2021, Karapalo et al. 2022), seeking to be the most relevant and useful for the target group (see Fig. 2). The book series were chosen, because they are specifically designed for the NCC for General Upper Secondary School Education 2019, which was applied in 2021. The material practices skills presented in the teacher's guides (opettajan opas) in both book series. These skills include interaction skills, cultural and intercultural competence, social and civic competence, working life skills, as well as communication and problem solving skills (see Fig. 2 and Fig. 3). These skills have been intentionally integrated into the exercises for example through group discussions, practicing intercultural awareness, addressing social issues, and requiring clear expression of thought. For example, "Mini-presentation about an English-speaking culture" practices working life skills, "English speakers in the world" and "Hobby vocabulary" language awareness skills, "Sustainability picture collage" and "Infographic on an environmental issue" communication skills,

"Environmental issues: podcast and forum" and "Kahoot on American Cuisine" interaction skills, "AI-generated images of happiness" and "Influencing in health and nutrition" everyday skills, and "Sharing news about social issues" civic skills.

	Themes			
	Working life skills	Family and youth	Civic skills	
	Culture	Healthy living	Language awareness	
	Communication and interaction	Food & Nutrition	Social issues	
	Personality and personal characteristics	Sustainability	Well-being	
	Linguistic and personal identity	Happiness	Hobbies	
	English as *lingua franca*	Environment	Everyday life	

Figure 2   The most frequent themes in Elements 1-2 and New Insights 1-2 (Davies et al. 2021, Karapalo et al. 2022).

The material in the package aims to meet the quality requirements of the Finnish National Agency for Education's (2022d) for digital learning materials (see Chapter 3.5). To meet the requirements, the material needs to have one of the following ideal characteristics of learning: supporting community learning and working together, supporting learning skills, supporting the learner's activity in relation to the phenomenon being learned, and offering challenging, open, and authentic tasks. These aspects of learning are included in the material for example in the form of group work, peer-feedback, reflective exercises, and offering authentic materials. Following Saarinen's (2020) view of optimal learning material, the material package also aims to provide material that is easily accessible, visually relevant, and instructed in clear steps. Overall, the material package aims to provide teaching material that is appropriate to the set themes, technically adequate for the teacher and the students, meaningfully designed, visually relevant, and functional as a whole.

4.2 Target group

The target group for the material package is EFL teachers in Finnish upper secondary schools and indirectly EFL learners in Finnish upper secondary schools. The target group has been chosen to be specifically upper secondary school teachers because technology-mediated language learning is suitable, necessary, and current in Finnish upper secondary schools due to additions such as digital textbooks and digital matriculation examinations (Kosola 2016). Because of the importance of supporting teachers and their digital literacy skills (Anthony et al. 2019), the material will include instructions for the teacher for successful use and adaptation of the material. The English teachers in non-Finnish upper secondary schools, or other foreign language teachers are also supported by providing the material completely in English. This allows for ease of understanding, and possible self-translation to another target language.

4.3 Organization of the material package

The material package is organized around five main themes consisting of the themes identified in the two textbooks series (see Fig. 2 and Fig. 3): Culture, Globalization, and Social issues; Sustainability and Environment; Healthy Living, Food, and Nutrition; Well-being and Happiness; and Identity, Family, and Hobbies.
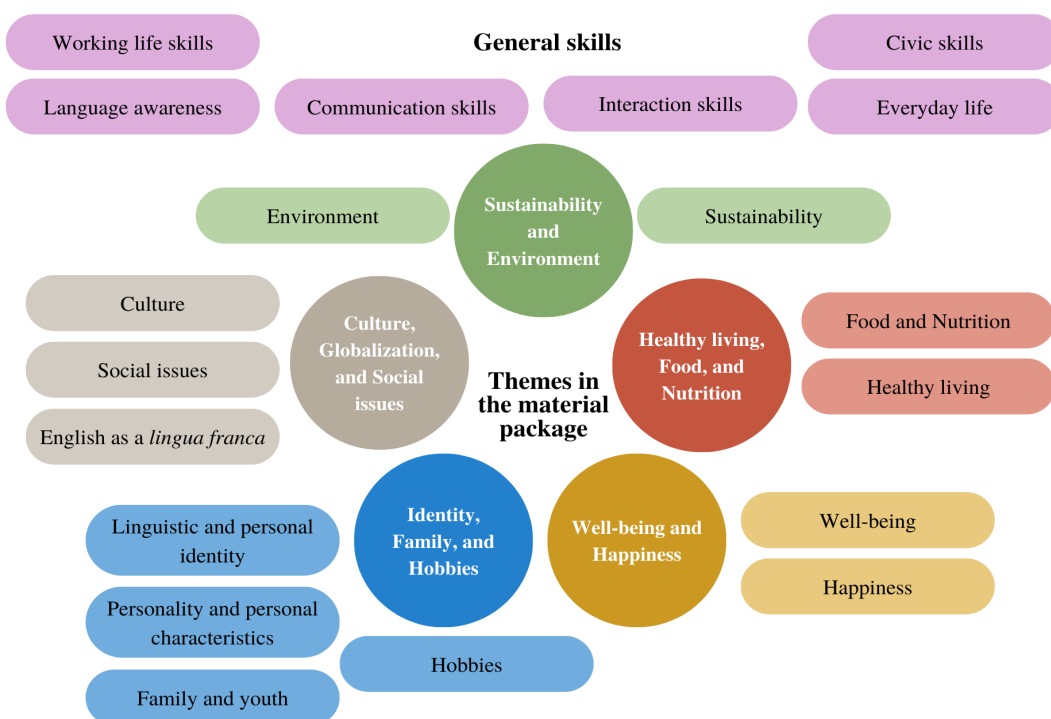
General skills

Working life skills

Civic skills

Language awareness · Communication skills · Interaction skills · Everyday life

Environment · **Sustainability and Environment** · Sustainability

Culture · **Culture, Globalization, and Social issues** · **Themes in the material package** · **Healthy living, Food, and Nutrition** · Food and Nutrition

Social issues · Healthy living

English as a *lingua franca*

Linguistic and personal identity · **Identity, Family, and Hobbies** · **Well-being and Happiness** · Well-being

Personality and personal characteristics · Happiness

Family and youth · Hobbies

Figure 3   Themes and skills in the material package

The five themes the material package covers have been created by re-grouping the themes in the two textbooks (Fig. 2 and Fig. 3): i.e. the themes of hobbies, linguistic and personal identity, personality and personal characteristics, and family and youth are combined as the theme of Identity, Family, and Hobbies. Each exercise then follows one of these main themes, for example, in the theme Identity, Family, and Hobbies there is one exercise about Identity ("Identity theft"), one about Family ("The cultural story of me and my family"), and one about Hobbies ("Hobby vocabulary"). There are three exercises for each theme. The themes are color-coded for visual clarity in Figure 3, as well as in the material package. The general skills in the material package (Fig. 3) are grouped separately, and do not specifically belong into the main five themes. In practice, this means that a variety of the exercises practice i.e. everyday skills regardless of their themes.

In the material package, the exercises display the digital tools they are mediated through (i.e. a mobile device such as a smart phone or a tablet), the time needed for the exercise (in minutes), and the group composition (i.e individual, pair, or group exercises). These aspects are displayed with icons, so the teachers browsing the website can clearly see this necessary information about the exercises. The teacher can also search for a specific format, time frame,

or group composition using the search bar at the upper right corner of the website (see Fig. 4).
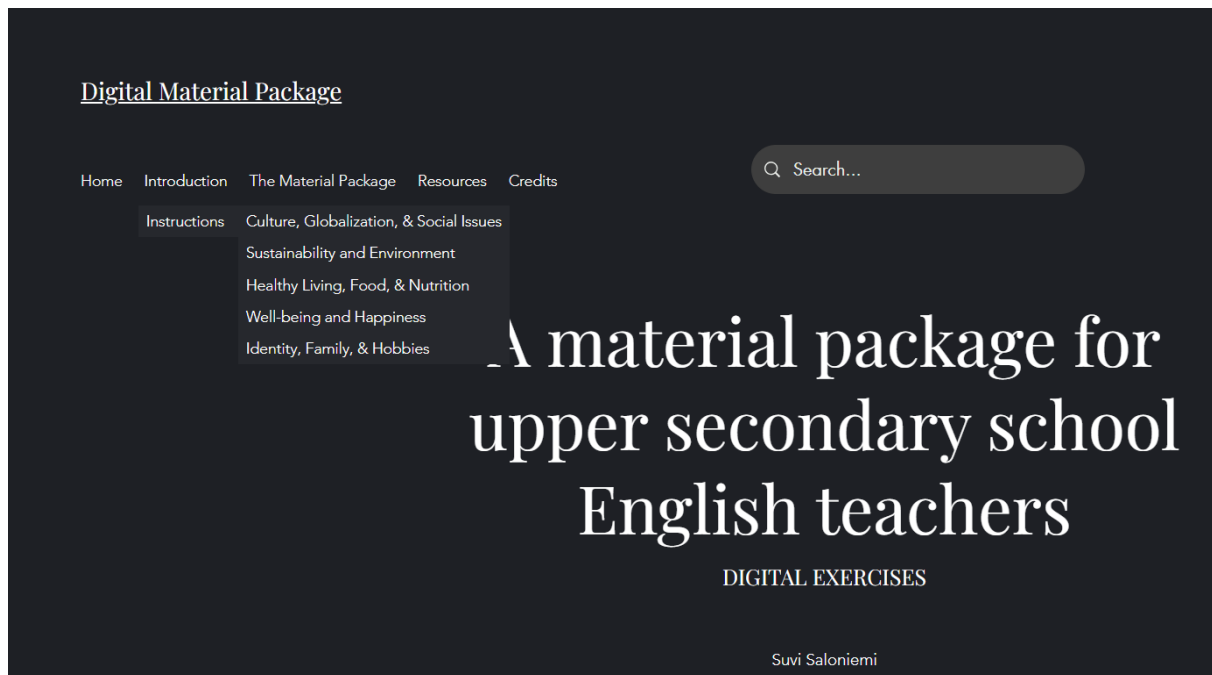

Figure 4   Navigation options in the home page of the material package

To navigate the material package, the user can click the titles in the menu bar, or hover over the titles to open a drop-down menu for additional navigation (as seen on Fig. 4). Each page on the menu bar also contains buttons to the pages in their respective drop-down menus. This design allows the user to either browse the material package as a whole, or click straight to the page that interests them. The user can also search for a specific word using the website's search bar. Each theme's page provides access to all of its exercises, and each exercise also includes a button back to its respective theme page. In addition to the home page, the theme pages, and the exercises, the material package includes pages for the introduction, instructions, resources, and credits for the material package (Fig. 4).

The material package provides the teacher with a simple and clear archive of exercises to pick and choose from. Because the themes in the material package are large, some of the themes can overlap in one exercise. For example, the exercise "The cultural story of me and my family" is under the theme of Identity, Family, and Hobbies (Fig. 3) in the material package but also practices contents from the theme of Culture, Globalization, and Social Issues. Some of the exercises can also be interchanged to fit another theme. For example,

the exercise "Happiness questionnaires" can be changed so that the students instead create questionnaires about sustainability or hobbies.

5 ANALYSIS AND CONCLUSION

This chapter discusses the process of creating the material package and analyzes the final product according to the aims and objectives for the package. The analysis focuses on pedagogical and the target audience's viewpoints, and elaborates on the pedagogical processes, and choices that led to the creation of the material package. After the analysis, conclusions are made on the material package.

5.1 The process of designing the material package

When starting to create the material package, I wanted to first acquire necessary understanding of the research on DLL, and the qualifications of successful digital learning material. In the thesis seminar it was necessary to create some exercises to exemplify my material package, but many of the early materials that I created did not satisfy me when I later reviewed them toward the requirements for successful digital learning material. In those cases, I had to revise the exercises, or scrap them altogether to make way for materials that were more appropriate for the material package. Once I finished all my research and solidified my aims for quality, exercises were easier to plan and develop to fit the quality criteria for a successful digital exercise.

Creating the materials was a multi-step process. I had trouble when starting to create my material package, reaching towards ideas that were too complex or too tasking to appropriately fit into the material package. Inspider by Kessler's (2018) article, I wanted to create a scale based on the teacher's digital literacy skills, showcasing what level of digital literacy skills were necessary for the teacher in each exercise or how easy each digital exercise was to conduct for a teacher based on their digital literacy skills. I wanted to base this scale on studies done by Kaarakainen and Saikkonen (2017) and Muhonen et al. (2015) who studied the information and communication technology skills of teachers in Finland. In the end, this turned out to be way too complex of an idea, as putting the teacher's digital literacy skills on a scale was not only unattainable but would have required a workload that was just not possible for this thesis. I tried to move towards an idea where I would write down what skills were recommended for the teacher to conduct the digital exercises, but that also would have required research on the field of digital skills and competences that were outside

of the time and space resources available for this thesis. So, in the end I adjusted the idea to giving a link and a short explanation of the platforms and their use in the exercises. This way, the teacher can read the explanation and get a clear idea of the platform, access it, and decide if it meets their needs and digital literacy skills.

There were also issues when creating the exercise descriptions. In the beginning, the exercises were presented in a way where the whole process and instructions were described in paragraphs. Finding this way to present the exercises too unclear, I modified the exercises to have the instructions in steps and further clarification as sub steps. Even with this change the exercises seemed unclear, so I converted the description into traditional exercise descriptions where the exercise is first instructed step-by-step from the students point-of-view, followed by clarifications, suggestions, and other notes for the teacher. This way the teachers would be able to clearly and immediately see what the exercise was about from a traditional student point-of-view, and then get further information about how to implement it in the classroom.

Overall, creating the exercises was both easy and difficult. After choosing the themes to build the exercises around, some exercises came to me easily and some required constant changing, finessing, and editing. For example, I knew that I wanted to create an exercise based on critical reading skills in social media, so "Influencing in health and nutrition" was easy to create in one go. The same can be said with the exercises "Identity theft", and "English speakers in the world". On the other hand, in "Happiness questionnaires" I first wanted to fit the questionnaires to the theme of Health, food, & Nutrition. I felt that the possibility of sharing personal health information, even anonymously, in the exercise was not an idea I was comfortable with, so I modified the exercise to fit the more neutral and positive theme of Happiness. Also, in "Hobby vocabulary", I first wanted the students to create their own interactive images to put the vocabulary words in. This option was not successful because I just could not find a platform that was easy to use, free to use, and did not require too much time for creating the interactive image itself.

For some exercises, I used my previous experiences with creating and using digital learning exercises for EFL. For example, I have used the mini-presentations as an exercise as shown in "Mini-presentation about an English-speaking culture", but instead of English-speaking cultures, they were famous sights in Finland. Most of the exercises were completely new inventions that I had not used before in teaching. This also added a layer of uncertainty to the

process because I did not have experience in how the novel exercises would perform in practice. But sticking with the aims of the material, and reaching for the requirements of quality of exercises, I had trust in my work, and the digital exercises I was creating.

As for the visual layout, I first created the material package in a Canva template (Canva n.d.), because it offered a user-friendly platform to visually format the exercises, and embed the necessary links to the exercise in a way that they would be easily available for the user of the material package. However, I later decided to change my material package to a website-builder platform, Wix (Wix n.d), because I felt that Canva's pdf-format was very restrictive for creating visually clear exercises. Wix also has many benefits over a pdf-file: a website platform gives the freedom to add playable videos and audio files into the exercises, and it can easily be accessed through the internet instead of downloading the information from a pdf-file. A website is also more inviting as a platform for the material package, as teachers can click back and forth between exercises and find exercises that interest them. Furthermore, the front page of a website can show exercise suggestions to showcase what the material package has to offer.

5.2 The material

The aim of the material was to provide exercises based on the themes and skills presented in two common EFL textbook series that are based on the NCC for General Upper Secondary School Education 2019 (Davies et al. 2021, Finnish National Agency for Education 2020, Karapalo et al. 2022). According to these sources, the material package was divided into five themes (Culture, Globalization, and Social issues; Sustainability and Environment; Healthy Living, Food, and Nutrition; Well-being and Happiness; and Identity, Family, and Hobbies). The material package also focuses on additional skills mentioned in the teacher's guides for both book series and NCC for General Upper Secondary School Education 2019 including working life skills, language awareness skills, communication skills, interaction skills, everyday skills, and civic skills (see Fig 3).

Many of these skills also overlap in exercises, and some skills are more practiced than others. For example, since pair and group work often require communication and interaction skills, those skills are majorly represented in the material. On the other hand, working life skills are

the least represented in the material, as the access to everyday and civic skill resources were more available during the construction of the thesis. The aim of the material was also to practice multiliteracy skills, especially digital literacy. Since almost all the exercises practice a different text type available digitally, the material package has reached this goal, and provides a variety of different forms of exercises for practicing multiliteracies.

The aim of the material was also to meet the quality requirements of the Finnish National Agency for Education's (2022d) for digital learning material (see Chapter 3.5). Following Saarinen's (2020) view of optimal learning material, the material was created with appropriate and meaningful use in mind. This means that the exercises focus on being well-implemented and enhancing the characteristics of good learning. For example, in the exercises "English speakers in the world" and "Sustainability picture collage" students practice community learning and working together through group work and working towards a common goal. Next, in "Hobby vocabulary" and "Mini-presentation about an English-speaking culture" students practice learning skills by creating their own learning materials that they also teach to someone else. Also, in the exercises "Identity theft" and "Personalized healthy lifestyle journey", students practice active learning and analysis of the themes. "Identity theft" instructs students to create a new identity and fake social media content with it, and "Personalized healthy lifestyle journey" steers students to make a personal map following health related locations that interest them. Finally, "Sharing news about social issues" and "Influencing in health and nutrition" are authentic tasks that challenge students with news articles and social media posts from authentic resources and ask the students to analyze them.

In her dissertation, Saarinen's (2020) emphasizes clear contents that are presented in steps, easily accessible, and visually relevant. She also speaks against excessive self-reliance, and tasks requiring extensive multitasking. This has been taken into consideration in the material package. The material is structured to introduce the exercise in steps to ensure understanding of the content without confusion or ambiguity. The teacher is also instructed to introduce or unpack the exercise before showing the exercise to the students, i.e. in exercises "Mindfulness exercise" and "English speakers in the world". The authentic reading materials are also designed to be easily accessible to students with hyperlinks, while also giving the teachers the full version of the links. The accessibility of the material package will be further focused on in the next chapter.

The material package is also visually relevant, as it includes only visually relevant content, such as images or videos to support comprehension. Some exercises do not have images, because they were not necessary for the exercise, or might even distract the student in the instructions. In terms of self-reliance, the material package aims to support the students by promoting collaboration, interaction, group work, pair work, and shared learning. In this way, the students can find support from their surroundings and the material fosters a sense of community. Finally, avoiding multitasking is followed in the design of the material package by setting clear, focused, and manageable instructions that support concentration.

The material package aimed to be useful, editable, and easily applied to different types of classrooms and lesson plans. As mentioned before, the usefulness of the material is supported by focusing it on the themes presented in the NCC for General Upper Secondary Educations 2019 (Finnish National Agency for Education 2020a), especially focusing on the themes in two of the most common book series following the NCC. In terms of user-friendliness, the exercises are designed to be chosen individually and attached into a lesson plan by the teacher. This means that the exercises do not require previous work on the theme, but can be implemented on their own, for example as an introduction, reflection, or closing exercise on the theme. The exercises are also editable, i.e. the exercises "AI-generated images of happiness", "Sharing news about social issues" and "English speakers in the world" provide suggestions for developing the exercise and the type of group the teacher has. The teacher is also supported by text that introduces and explains the different technologically mediated platforms used and their accessibility. The exercises include suggestions for differentiation to support the teacher in catering to diverse learners. In terms of visual support, the material package uses icons to clearly showcase details about the exercise, such as the technological device used, the time used for the exercise, and the group format. The website platform itself is dark in color mainly to be visually more pleasing, less straining for eyes, and beneficial to view from an OLED-screen. The website also has a user interface that is easy to work with, clearly navigated, and visually appealing.

The aims and objectives of the material package were considered while creating the material package and met in the finished work. The material has been successfully created to support the relevant themes for the teachers and the NCC for General Upper Secondary School Education 2019, the quality requirements set by the Finnish National Agency for Education's

(2022d) and Saarinen (2020), as well as user-friendliness for the teachers. So overall, it can be concluded that the material package is successful in providing material that is appropriate to the set themes, technically adequate for the teacher and the students, meaningfully designed, visually relevant, and functional as a whole.

5.2.1 Ethical aspects

In the process of creating the material package, it was also important to consider ethical aspects such as accessibility, originality, and issues of copyright in the material. In terms of accessibility, the material was created to be equally accessible to everyone in the classroom. This means that with a variety of platforms in the material, every exercise has at least one platform that is completely free to use and does not require students to sign-up for it. This is especially important because the material is for minors, and the children's rights of data privacy and safety in protecting personal information is necessary when working with digital technologies (European Commission n.d.). Even platforms that might require sign-up are platforms that most of the students are likely to already have access to or familiar with through the school, for example a Google account, or an account in popular graphic design tools like Canva or Prezi. In terms of accessibility to digital devices and the internet, most students in Finland have access to a digital device (such as a smartphone, a tablet, or a laptop), and upper secondary schools in general have to offer free digital devices for students to use in their studies due to an extension in compulsory education to end at the age of 18 (Finnish National Agency for Education 2020, Ministry of Education and Culture 2021). More teachers and students are provided with a continual access to their own digital devices through 1:1 (one-to-one, one device per student) or BYOD (Bring Your Own Device) movements, eliminating possible unequal access to digital learning material (Olofsson and Lindberg 2018). Finland also has advanced digital infrastructure and the population has equal access to the internet, while being one of the frontrunners of digital skills within the EU (Antony et al. 2019, European Commission 2021). With also growth in digital competence among teachers and students after the pandemic (Finnish National Agency for Education 2020), the material supports easy, free, and clear accessibility for the students and the teachers.

When creating material based on two different textbooks, it is important to consider the originality of the material. In the process of creating the material package, both book series' exercises were analyzed and compiled to make sure there was no room for creating the same or a similar exercise by accident. While there is some overlap in the text types the exercises produce, i.e. making a podcast or conducting a survey, the themes that the exercises focus on are different and presented with different steps and processes.

Creating material on the internet, beyond the classroom, brings issues around copyright enforcement and infringement (Fitzgerald et al. 2017). Teachers especially are encouraged to be aware of the digital literacies in online material development, which includes digital commons and open licensing (Cambridge Language Assessment n.d., Fitzgerald et al. 2017). In the material package, this has been taken into account both in the exercises developed, as well as in the material package. The exercises explicitly offer and encourage the use of free stock photo websites, and all of the visual material in the package itself has been taken from a free stock collection and have been given credit. The copyright of the material has also been clearly stated on the website, and available to see on every page. Also considering Wix as a website-builder, the Terms of Service also state that the creator of the website has the full rights and authorship to everything they create on the website. The only question of ownership arises from Wix's access to the content to freely use it in marketing and promotion activities and modify it as reasonably necessary. However, this is basic protocol in most free to use platforms available online.

5.3. Conclusion

In conclusion, the material package has reached the aims and objectives in giving Finnish upper secondary EFL teachers versatile, flexible, and relevant digital exercises for their in-class teaching through relevant themes, meeting the requirements of quality, and supporting the teacher in pedagogical and user-friendly aspects of the material. The strengths and weaknesses of the material package are viewed below in relation to the theoretical background of the material package and the processes throughout creating it.

The material package offers a variety of exercises based on the technology-mediated platforms in DLL, such as CALL, MALL, and SMALL. Though, taking into account AI's

current relevance and innovation in the educational field (Baidoo-Anu and Ansah 2023), there are no exercises in the package directly marked as using AI. There is one exercise that uses an AI image generator, "AI-generated images of happiness", and one exercise offering authentic material discussing the use of AI, "Sharing news about social issues", but those are the only two instances of AI use in the material package. The reason for this is that most of the AI-generators are not accessible without sign-up. Also, AI text generators still have issues in providing false information, or biases (Baidoo Anu and Ansah 2023).

The material was also designed with the pedagogical approach in mind, focusing first and foremost on practicing the relevant themes and skills. Each exercise clearly states which themes and skills it is meant to practice. On the other hand, the material's weakness is in assessment. The teacher is encouraged to assess students based on the final product of the exercise, and participation during it. That is, however, not clearly stated in every exercise, and requires that the teacher understands if the final product fits the goal of the exercise. The teacher can use the skills to be practiced in the exercise as a frame for assessment, but there are limited instructions for the teacher for this. Also, it would be beneficial for the students if the learning objectives were clearly stated in every exercise, so that they would understand the pedagogical reasoning behind the exercise.

The strengths of the material package are on the diversity, relevance, and editability of the exercises. With fifteen different exercises to choose from, all belonging to a different relevant theme, the teachers can choose the ones that they are interested in and edit them to fit their groups and lesson plans. Of course, there are different types of teachers, some who might prefer a rigid lesson-to-lesson structure when it comes to learning material, but for the teachers who prefer flexibility in their lesson plans this material package offers a variety of exercises. On the other hand, there are also many exercises that take a long time to conduct (30 minutes or more). This may affect how easily these exercises can be adapted to the lesson plan. However, as the material also aims to focus on the themes and skills presented in the textbooks and the NCC for Upper Secondary School Education 2019, and to successfully teach these necessary skills some themes require time for reflection, group work, and research.

Other strengths in the material package are accessibility and aspects of differentiation. During the process of creating the material package, it was personally important for me to make sure

that each of the exercises had free to use platforms, and at least one platform that did not require a sign-up from the student. This way, the material combats the possibility of rising inequality among students, increases flexibility, and offers a wide range of resources for students to choose from. In terms of the exercises themselves, the material package's strength is in the variety of exercises, collaborative learning, and innovative approaches to the themes, i.e. "Environmental issues: podcast and forum", "Influencing in health and nutrition" and "Identity theft". On the other hand, there are some concerns that some of the material might be too linguistically difficult for some of the students, for example in the exercises "Infographic on an environmental issue", and "Sharing news about social issues" the difficulty of some texts goes over the B1 level of language proficiency. In all of these cases, the exercise is conducted either in pairs or in groups, which offers support for the students who are weaker in the language.

Overall, the material package is a comprehensive and well-structured collection of DLL exercises that will give an inclusive learning experience as it incorporates various skills necessary for the future, including multiliteracy and digital literacy skills. The package consists of engaging material that promotes critical thinking, creativity, and fosters a positive and inclusive classroom environment. Suggestions to improve the material package in the future would be in designing clear guides for assessment, providing learning objectives that are visible for the students, including opportunities for formative assessment, and providing more information about the necessary digital literacy skills of the teacher to use the material. With more time and resources, it would also be preferable to create a greater number of exercises with even more variety.

Hopefully the material package, and the Master's thesis can educate and inspire teachers and future teachers in aspects of multiliteracies education, DLL, and designing digital teaching materials. In a globalizing, digitalizing, and multimedial world, multiliteracy and digital literacy skills are increasingly needed both for the students, and the teachers. Digital learning exercises are, then, valuable resources for promoting these skills, enhancing the learner experience, and contributing to the overall success of EFL education.

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APPENDIX

THE DIGITAL MATERIAL PACKAGE

Full link: https://saloniemi.wixsite.com/digital-material-pac