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DISCURSIVE CONSTRUCTIONS OF DIGITAL ARTIFACTS BY PRIMARY SCHOOL TEACHERS OF ENGLISH

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Abstract. *This article introduces and discusses a study that aims at shedding light upon discursive constructions of digital artifacts found in academic writing by primary school teachers of English as a Foreign Language (EFL). The study involved a group of primary school EFL teachers (further – participants), who were requested to write a series of academic essays on the topics in EFL didactics that focused on English grammar and/or phonetics and children's literature in English. The corpus of the participants' essays was examined for the presence of explicit references to digital artifacts. The results of the quantitative analysis of the corpus revealed that whilst the participants referred to YouTube as a digital artifact that they used in their teaching of English grammar and/or phonetics, they employed SmartBoard-related digital artifacts in order to teach aspects of children's literature in English. These findings were further presented and discussed in the article.*
Key words*: digital artifacts, discursive constructions, English as a Foreign Language (EFL), primary school teachers*

1. Introduction

Recent literature in applied linguistics and English as a Foreign Language (EFL) indicates that "research on digitally related teaching and learning will undoubtedly soar in the next decades" (Goşa and Mureşan 2020: 91). An expected increase in research topics on digitalisation in a variety of EFL contexts is, perhaps, not surprising, given that the use of digital technology constitutes a typical feature of the EFL teaching and learning process in Europe and North America (Becker and Otto 2019; Goşa and Mureşan 2021; Howard 2019; Jic 2016; Lund and Aagaard 2020; Lund, Furberg and Gudmundsdottir 2019; Radin 2017). In particular, digital technologies (inclusive of digital artifacts, hardware, and software) are deemed to form an inalienable part of the EFL teaching and learning in Northern Europe (Örtegren 2022) and, specifically, in Norway, where digitalisation and digital artifacts are used in the EFL contexts in primary and secondary schools on a daily basis (Bader, Iversen and Burner 2021; Lindeman, Svensson and Enochsson 2021).

Inspired by the omnipresence of digital artifacts in Norwegian primary school settings (Kapranov 2020; Krulatz, Steen-Olsen and Torgersen 2018; Krumsvik 2020; Tømte and Gjerustad 2020), this article presents and discusses a study that seeks to identify, analyse and classify discursive constructions of digital artifacts in the corpus of academic essays written on a range of topics in EFL didactics by a group of primary school EFL teachers (henceforth – participants). In concord with Lee, Thomas and Baskerville (2015), digital artifacts are broadly conceptualised in the study as a digital entity that is comprised of such components, as i) information (a message), ii) technology (hardware and software), and iii) a social act of communication (a contextually bound communicative act that takes place in a socio-cultural space). The latter component is problematised in the literature as a combination of material objects and symbolic systems that can be open for negotiation and conflict in social and communicative practices (Erstad 2002: 427). In the study, digital artifacts in primary school EFL settings are operationalised as digitalised actions, communication, images, music, narratives, objects, people, and videos (Pastor 2018).

Discursive constructions of digital artifacts are approached in the study through the lenses of Vygotsky's (2012) concept of mediation and Wodak's (2012, 2009) perspective on discursive constructions. In accordance with Wodak (2009), discursive constructions are problematised as the linguistic realisation of an issue that involves the reference to discursive content and patterns that are context- and audience-sensitive, i.e., embedded into a particular linguistic and socio-cultural setting (Buttny 2012). Following Wodak (2012, 2009) and Reisigl and Wodak (2009), discursive constructions are argued to comprise reference and nomination, argumentation, and perspectivation that are related to a set of discursive strategies that are emblematised by the following considerations:

> 1. How are persons, objects, phenomena/events, processes, and actions named and referred to linguistically? 2. What characteristics, qualities, and features are attributed to social actors, objects, phenomena/events, and processes? 3. What arguments are employed in the discourse in question? 4. From what perspectives are these nominations, attributions and arguments expressed? (KhosraviNik, Krzyżanowski and Wodak 2012: 286-287)

Building upon Wodak's views (2012, 2009), discursive constructions of digital artifacts in the study are thought to be manifested by means of lexical units and syntactic devices that are associated with the following forms of reference: i) generic, that involves the nomination of a digital artifact; ii) spatial, that points to the situatedness of a digital artifact; iii) temporal, that indicates the time coordinates of a digital artifact; and iv) instrumental, that is related to the manner a digital artifact is manipulated.

Another important notion in the study concerns a Vygotskian (2012) perspective on mediation in human activity. In agreement with Vygotsky (2012), mediation is deemed to be grounded in socio-cultural and historical situations that involve the use of socially meaningful semiotic and material tools (Daniels 2016; Ritella and Hakkarainen 2012; Subero et al. 2018). According to Vygotsky (2012), mediation comprises mental activities that are associated with culturally derived sign systems (Fernyhough 2008). In other words, sign systems possess a mediating function, i.e., how people use sign-symbolic means as mediators of their actions or the actions of others (Kervin 2016; Sapogova 2005). In addition to the sign-symbolic means (Vygotsky 1981), mediation is argued to involve material tools, psychological tools, and other human beings (Presseisen and Kozulin 1992: 8). In this regard, Huong and Hung (2021: 513) posit that "according to Vygotsky, tools and symbols are two aspects of the same phenomena". Specifically, whereas a material tool is associated with labour operations, a sign is involved in psychological activity that transforms "the entire flow and structure of mental functions" (Vygotsky 1981: 137).

Vygotsky's (2012, 1981, 1978) thoughts on mediation have provided a solid foundation to a growing body of research that applies them to a variety of educational contexts in order to provide insight into how digital artifacts as mediators are used in the learner's individual development, the teacher's interaction with the learners, and the learner – teacher interface (Albano, Dello Iacono and Mariotti 2021; Bader, Iversen and Burner 2021; Daniels 2016; Kervin 2016). Informed by Vygotsky's (2012, 1981, 1978) ideas associated with mediation and Wodak's (2012, 2009) approach to discursive constructions, the study that is further described in the article explores how digital artifacts are constructed discursively by the participants, who are primary school EFL teachers. It should be noted that whereas the current literature (Bader, Iversen and Burner 2021; Kapranov 2022; Krulatz, Steen-Olsen and Torgersen 2018) addresses the use of digital artifacts by pre-service EFL teachers in Norway, analogous studies including in-service primary school EFL teachers remain unexplored (Kapranov 2020; Tømte and Gjerustad 2020: 260). Moreover, there seems to be no published research that specifically pays attention to discursive constructions of digital artifacts in academic essays written by in-service primary school EFL teachers. In order to gain insight into this under-researched topic, the study aims at identifying how the participants

(i.e., in-service primary school EFL teachers) refer to digital artifacts discursively in a series of academic essays that contain lesson plans in English grammar and/or phonetics (further in the article – ELing) and children's literature in English (thereafter – ELit). Another research aim of the study consists in investigating how the participants refer to digital artifacts from the point of view of instrumental reference in the sense postulated by Wodak (2009). Taking into consideration the aforementioned aims, the study addresses the following research questions (RQs):

> **RQ 1**: How are digital artifacts as mediators referred to discursively in the participants' lesson plans in English grammar and/or phonetics and children's literature in English?
>
> **RQ 2:** What instrumental reference do digital artifacts as mediators have in the participants' lesson plans in English grammar and/or phonetics and children's literature in English?

Prior to proceeding to answering the RQs, I provide a review of the recent literature on digital artifacts in primary school EFL contexts.

2. Literature review

Given that digitalisation forms an important aspect of the EFL teaching and learning processes (Kessler 2013; Soler Pardo 2014) and provides countless opportunities for EFL professionals to take full advantage of the opportunities that it creates for their classes (Cozma 2015: 1231), there is a considerable body of research on the use of digital artifacts in various EFL contexts (see Pastor (2018) for a comprehensive and systematic review of the literature). In the article, however, I focus on the recent publications on digital artifacts in EFL settings at primary schools that that problematise the following research themes: i) potential advantages and disadvantages of using digital artifacts and digital games in the EFL teaching and learning process (Andreeva and Lukinykh 2021; Kolb 2021; Koufopoulou and Karagianni 2021); ii) pre-service EFL primary school teachers' attitudes and perceptions of digital artifacts (Bader, Iversenare and Burner 2021; Ou-sekou, Kaddari and Zaid 2021); and iii) the use of digital artifacts associated with mobile tools in young EFL learners' vocabulary development (Song and Ma 2021).

The research theme of potential advantages and disadvantages related to digital games in an EFL classroom in primary school is investigated by Andreeva and Lukinykh (2021), and Koufopoulou and Karagianni (2021). In these studies, digital games are viewed positively as "assistive means to the teachers' purposes" (Koufopoulou and Karagianni 2021: 225). The authors argue that digital games facilitate the intensification of language-didactic and pedagogical processes (Andreeva and Lukinykh 2021) that are related to the teaching and learning of grammar and vocabulary (Koufopoulou and Karagianni 2021). There is a contention that the use of digital games by young EFL learners, who are typically described as "digital natives" (Jones 2011; Prensky 2001), should constitute one of the main didactic approaches in an EFL classroom in primary school (Andreeva and Lukinykh 2021: 97). In contrast to the aforementioned argument, however, Koufopoulou and Karagianni (2021: 226) posit that the use of digital games in EFL settings may, potentially, lead to digital gaming addiction on the part of a young EFL learner.

In unison with Andreeva and Lukinykh (2021), Kolb (2021) regards young EFL learners as "digital natives" whose use of digital media in the EFL classroom in primary schools appears to be positive. In this regard, Kolb (2021: 125) notes that "with digital media playing a relevant role in primary school children's daily life, […] media competence is established as a major goal in primary school curricula". Kolb (2021) argues that digital media in the EFL classroom function as a communication medium, a tool, a resource, and a tutor that facilitate young learners' learning

opportunities in different competence areas, such as speaking and listening, reading and writing, intercultural communicative competence, and language awareness.

Pre-service primary school EFL teachers' attitudes and perceptions of digital artifacts are examined by Bader, Iversen and Burner (2021), and Ou-sekou, Kaddari and Zaid (2021), who seem to share a contention that pre-service EFL teachers' perceptions of digital artifacts vary considerably in Norwegian (Bader, Iversen and Burner 2021) and Moroccan (Ou-sekou, Kaddari and Zaid 2021) EFL contexts, respectively. The pre-service primary school EFL teachers' attitudes towards digital artifacts vary due to such variables as self-expression, online privacy, availability, easiness to use, and personal needs (Bader, Iversen and Burner 2021; Ou-sekou, Kaddari and Zaid 2021). It follows from these studies that pre-service EFL teachers' positive and/or negative attitudes towards digital artifacts "may depend on their current working habits, their level of engagement, and their motivation for using them" (Bader, Iversen and Burner 2021: 31), given that their digital culture and practices are "rooted in their personal use of various tools and resources" (Ou-sekou, Kaddari and Zaid 2021: 11).

In contrast to Bader, Iversen and Burner (2021), and Ou-sekou, Kaddari and Zaid (2021), whose research involves pre-service primary school EFL teachers, Song and Ma (2021) focus their investigation on young EFL learners in primary school. Specifically, Song and Ma (2021) indicate that digital artifacts that are employed in vocabulary learning by young EFL learners facilitate vocabulary use, revision and expansion. Additionally, Song and Ma (2021) report that the young EFL learners' perceptions of the digital tool for vocabulary learning are positive.

It can be summarised that the current literature explores a number of research themes associated with the attitudes, perceptions and use of digital artifacts by the cohorts of in-service and pre-service primary school EFL teachers and young EFL learners. However, there are insufficient studies that focus on how digital artifacts are construed discursively by in-service primary school EFL teachers. Further, I introduce and discuss a study that aims at contributing new knowledge to the state-of-the-art research on this underrepresented topic.

3. The present study: participants, context, hypothesis, corpus, and methods

In the present study, there are 32 participants (30 females, 2 males, mean age = 43 years old, standard deviation = 8.3), who are in-service primary school EFL teachers. They all speak Norwegian as their first language (L1) and English as a foreign language (FL). The participants have signed consent forms allowing the author of the article to collect and analyse their essays for scientific purposes. To ensure confidentiality, the participants' real names are coded as P1 … P32 (P = participant and a number from 1 to 32).

The study is contextualised in a university course that is designed for the participants with no prior university education in EFL. The course, which is referred to as the Quality for Competence (QfC) course in English, is offered at a university in Norway. It provides in-service teachers with a possibility to combine their tertiary education in EFL with full-time employment at a range of primary schools. The practice of offering QfC courses to in-service EFL teachers is supported by the Norwegian government and education authorities in order to provide in-service EFL teachers with specialist knowledge and skills (see a detailed description of the Norwegian QfC scheme in Coburn (2016)). The QfC course in English lasts for two semesters. In the second semester, the participants are requested to write two academic essays in English didactics on the topics in English linguistics (ELing) and children's literature in English (ELit). The participants are asked to write a lesson plan in conjunction with each essay topic, i.e. one lesson plan per essay (both ELit and ELing). As far as the lesson plans are concerned, the participants are instructed to write them as a description of their typical EFL lesson in linguistics (ELing) and children's literature in English (ELit), respectively. There are no specific instructions to the participants to include the reference to digital artifacts in their lesson plans.

The following assumption is formulated in the study. Taking into consideration the fact that the participants receive no specific cues concerning the need to refer to digital artifacts in the lesson plans in their ELing and ELit essays, it is assumed that the lesson plans might involve discursive constructions of digital artifacts that are reflective of their quotidian teaching behaviour and typical practices as far as the use of digital artifacts in the EFL lesson is concerned. Hence, the participants' discursive constructions of digital artifacts, if any, would be representative of their "ways of knowing that operate through […] everyday practices" (Markula and Silk 2011: 49). Based upon the assumption, there are two specific research questions in the study (see RQ 1 and RQ 2 in the introductory part of the article) that seek to provide insight into discursive representations of digital artifacts as mediators and their instrumental reference in the participants' lesson plans.

The corpus of the study comprises academic essays inclusive of lesson plans in English grammar and/or phonetics (ELing) and children's literature in English (ELit). Given that each participant is asked to write one ELing and one ELit, the total number of essays in the corpus is 64. The corpus is characterised by such descriptive statistics, as the total number of words (23 653 in ELing; 33 730 in ELit), mean words (739 in ELing; 1054 in ELit), and standard deviations (397 in ELing; 188 in ELit). These statistics have been calculated in the computer program Statistical Package for Social Sciences, SPSS (IBM 2011). Further, the corpus has been manually examined for the presence of reference to digital artifacts in the lesson plans.

Methodologically, the study involves two stages, the stage of the qualitative analysis and that of the quantitative analysis. The first stage is guided by the Vygotskian idea of material tools as mediators in the teaching and learning process (Presseisen and Kozulin 1992; Vygotsky 2012). The study regards digital artifacts as material tools that mediate the teaching and learning of the English language and literature in an EFL classroom in primary schools. Following this view of digital artifacts, the corpus of the participants' essays inclusive of the lesson plans is searched manually for the presence of the explicit instances that are indicative of the use of digital artifacts as mediators in the EFL classroom.

In the second stage of the analysis, the digital artifacts in the corpus are examined for the type of instrumental reference in the sense postulated by Wodak (2012). In accordance with Wodak (2012), the instrumental reference of a digital artifact is investigated qualitatively by means of identifying discursive representations of what the participants do with the artifact and how they manipulate it in order to achieve a didactic aim in the EFL teaching and learning process. This is followed by the calculation of the percentage of participants, who refer to digital artifacts discursively and state how they use them instrumentally in their EFL teaching practices. These statistics are calculated in SPSS (IBM 2011).

3.1. Results and Discussion

As previously mentioned, the assumption in the study involves the contention that the participants' discursive constructions of digital artifacts would reflect their quotidian teaching behaviour and typical practices as far as the use of digital artifacts in the EFL lesson is concerned. The results of the corpus analysis indicate that the participants refer to the digital artifacts as mediators in the EFL teaching process that are associated with iPads, SmartBoards, and YouTube. Additionally, it has been established that the participants' discursive constructions of digital artifacts are characterised by varied instrumental references. These findings are summarised in Tables 1 and 2 below. In particular, Table 1 provides the percentage of all participants, who make references to digital artifacts in ELing and ELit.

Table 1. Discursive Reference to Digital Artifacts in the Participants' Essays and Lesson Plans

N	Digital Artifacts	Participants with Reference to Digital Artifacts in ELing	Participants with Reference to Digital Artifacts in ELit
1	YouTube-related	34.3%	9.4%
2	SmartBoard-related	9.4%	21.8%
3	iPad-related	9.4%	15.6%

The participants' instrumental reference to the digital artifacts in the study is given in Table 2. It represents the percentage of all participants, who construe digital artifacts discursively by means of explicit instrumental reference associated with what the participants do with the artifact and how they manipulate it in order to achieve a didactic aim in the EFL classroom.

Table 2. Instrumental Reference to Digital Artifacts in the Corpus

N	Digital Artifacts	Instrumental Reference to Digital Artifacts in ELing	Instrumental Reference to Digital Artifacts in ELit
1	YouTube	Listening 28.1% Watching 6.2%	Watching films as pre-reading 9.4%
2	SmartBoard	Reading 6.2 % Writing 3.1%	Reading 12.5% Showing illustrations from the e-book as pre-reading 9.4%
3	iPad	Listening and reading 6.2 % Recording speech 3.1%	Reading 12.5% Watching films as pre-reading 3.1%

Further in the article, the abovementioned findings are discussed through the lenses of RQ 1 and RQ 2, respectively. To reiterate, RQ 1 addresses the issue of discursive representations of digital artifacts in the participants' essays and lesson plans, whilst RQ 2 discusses their instrumental references.

3.1.1. Discussing RQ 1

As seen in Table 1, discursive constructions of digital artifacts in the corpus are associated with iPads, SmartBoards, and YouTube. Judging from the data, the participants exhibit different preferences for YouTube-related and SmartBoard-related digital artifacts. In particular, the participants seem to prefer YouTube-related digital artifacts in their teaching of English grammar and phonetics (34%), whilst they use, predominantly, SmartBoard-related digital artifacts in their teaching of children's literature in English (22%). Presumably, the participants' preferences for certain digital artifacts (e.g., YouTube) as mediators in their EFL teaching in primary school contexts are suggestive of their quotidian teaching practices. It seems possible to argue that the participants' discursive constructions of digital artifacts are reflective of their social and professional reality (Buttny 2012) that involves EFL teaching contexts in primary school. In other words, it could be posited that discursive constructions of digital artifacts in the corpus manifest the participants' by-default choices of digital artifacts, as well as digital technology in general, which they use routinely, perhaps, on a daily basis. This contention is based upon the fact that the participants received no specific instructions in their essay writing as far as the use of digital artifacts in the lesson plans is concerned. The contention seems to be further supported by the participants' discursive means of temporal reference that are indicative of habitual, routinised

actions and activities associated with their use of digital artifacts, as illustrated by Excerpt (1) below:

> (1) Usually in class I would start by showing the nursery rhyme below on the Smartboard without the syllables written in bold type. First I would read it out loud with a completely mechanical rhythm, and ask them to find out what was wrong and why. The whole class can comment on my reading and what was wrong. Then I could read the rhyme once more with correct pronunciation and stress. I can guide the class through reading this nursery rhyme with special attention to the combination of light and heavy syllables. On the Smartboard the students can read and provide the right stress to the heavy syllables that have bold letters. (Participant P7)

It follows from (1) that the participant contextualises digital artifacts (e.g., "the nursery rhyme below on the Smartboard") within the narrative that is reflective of habitual actions that are marked by the adverb of frequency "usually".

Whereas the participants' discursive constructions of digital artifacts are associated, mostly, with iPads, SmartBoards, and YouTube, it is evident from Table 1 that the use of digital artifacts varies depending on whether or not they teach aspects of English grammar and/or phonetics on the one hand and children's literature in English on the other hand. This finding is in line with the recent literature (Bader, Iversen and Burner 2021; Ou-sekou, Kaddari and Zaid 2021) that argues that the use of digital artifacts in the EFL classroom depends on the teachers' linguo-didactic routines and practices that are related to the teachers' personal preferences for using a particular digital resource. Seen from a more general perspective on digitalisation in primary school contexts, these findings are evocative of the argument proposed by Lund and Aagaard (2020: 59), who suggest that digital artifacts function as gatekeepers to societal and cultural practices that involve, as the present findings show, a varied use of the digital artifacts depending on the teaching task at hand.

As previously mentioned, the participants appear to use digital artifacts routinely as a part of their teaching practices. Presumably, they treat digital artifacts as an inherent facet of their socio-cultural reality, since they do not provide emotive or evaluative lexical items that refer to digital artifacts. Furthermore, there is no linguistic evidence in the corpus that points to the participants' positive and/or negative attitudes associated with the use of digital artifacts. Rather, their discursive constructions of digital artifacts in the corpus seem to be neutral. It is inferred from the participants' lesson plans that digital artifacts are treated by them solely as tools that mediate the teaching process. Hence, we may argue that they are used as digital tools as mediators in the Vygotskian (2012) sense. This finding is in contrast to the prior literature that reports negatively connoted references to digital artifacts, specifically digital gaming in the EFL classroom (Andreeva and Lukinykh 2021; Koufopoulou and Karagianni 2021). Moreover, unlike in the study conducted by Song and Ma (2021), the participants' essays (inclusive of the lesson plans) do not involve positive attitudes associated with the use of digital artifacts as mediation tools. To reiterate, these findings point to the neutral discursive constructions of digital artifacts by the participants, who, presumably, regard them as a tool only. Such a view of digital artifacts is concomitant with the study conducted by Kolb (2021), who regards digital artifacts as a tool that plays a relevant role in the EFL classroom in primary school (Kolb 2021: 125).

Another important finding related to the discursive constructions of digital artifacts in the study consists in the following. It has been established in the course of the analysis that the participants do not refer to the need to explain to their students how to manipulate digital artifacts. Judging from the data, there is no single instance in the corpus of the participants' essays that deals with the participants' explanations and/or instructions to the students concerning, for instance, the use of YouTube. In other words, the participants do not have to teach their students how digital artifacts are manipulated in the classroom context. It should be noted that the participants teach young EFL learners born after 2007, who are a part of the generation of "digital natives", characterised by extensive exposure to digital technologies both at school and at home (Evans and

Robertson 2020; Kessler 2013). This finding is in unison with Andreeva and Lukinykh (2021), and Kolb (2021), who regard young EFL learners as "digital natives" who are capable of navigating the digital cyberspace without the teacher's intervention.

Whilst the use of digital artifacts by the participants seems to be quotidian, the data summarised in Table 1 point out to the fact that one half of the participants do not refer to digital artifacts in their essays (both ELing and ELit) and the respective lesson plans. This is reminiscent of the findings reported by Bader, Iversen, and Burner (2021), who argue that not all EFL teachers use digital technology in their teaching activities. Similarly, it can be inferred from the present findings that digital artifacts should be employed more extensively by in-service primary school EFL teachers in Norway.

3.1.2. Discussing RQ 2

As mentioned in the introduction, RQ 2 seeks to establish how instrumental references are manifested in the participants' discursive constructions of digital artifacts. It should be reiterated that in accordance with Wodak (2009), instrumental references are associated with verbs and verb phrases that indicate what people do with an artifact and how they use it, manipulate it, and apply it to achieving a certain aim. It is evident from Table 2 that the most frequent instrumental references are made by the participants with regard to such lesson activities, as reading, listening, and watching as a part of pre-reading activities.

Whereas the instrumental reference to listening concerns the use of YouTube, the participants' instrumental references to reading activities in the EFL lesson are facilitated either by iPads or SmartBoards. Reading via the SmartBoard as a mediator in the sense by Vygotsky (1978) is present in the subcorpora of both ELing and ELit essays, whereas reading facilitated by iPads is manifested in the ELit subcorpus only. These findings are illustrated by Figure 1 below.

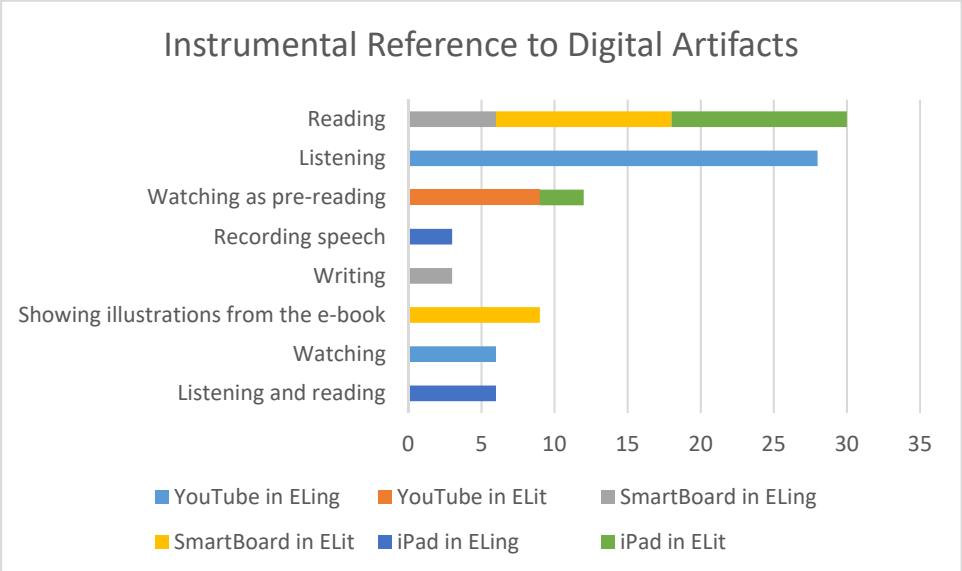


Figure 1. Instrumental References to Digital Artifacts in the Corpus

Judging from the data (see Figure 1 and Table 2), the participants employ the instrumental reference associated with listening in relation to YouTube in the subcorpus of ELing essays that are focused on the aspects of English phonetics. Typically, the participants indicate that they use excerpts from YouTube with the native speakers in order to facilitate listening comprehension and/or to work on a particular sound of the English language, as exemplified by Excerpts (2) – (3) below.

(2) Further I will present my class a video on YouTube, "English with Lucy", which is about the differences between English pronunciation and American pronunciation. This video is only 6 minutes and is not difficult to listen to. It will also be possible for me to pause the video and practise pronunciation with the class. (Participant P10)

(3) I would start with different YouTube movie bits in BE and AE. […] Once the students have listened to both BE and AE, I can start having a discussion with them what the differences between BE and AE are. Most of them will probably notice the rhotic /r/ in AE, which does not appear as much in BE. Once they have observed and listened to the difference, I can move a step further. I can either discuss with the students about the different R in BE and AE or give them a task right away. I think it is important for the students to take part in their learning and listen to what they find amusing to work with it in order to make teaching more fun and motivating for them. (Participant P19)

It follows from both (2) and (3) that the participants choose YouTube-related digital artifacts in order to focus on fostering listening skills. Arguably, their choices are guided by the practical use of digital artifacts that are treated as a mediator in achieving a concrete didactic goal. Presumably, from Vygotsky's (1978) perspective, the participants appropriate a digital artifact, such as a YouTube video, in their teaching not as value in itself, but as a mediating digital tool that serves a linguo-didactic purpose set by the participants. In accordance with Vygotsky's (1978) ideas, we can suppose that the participants appropriate digital artifacts that mediate aspects of knowledge to others (i.e., EFL students).

Following Vygotsky (2012), it seems reasonable to assume that not only the EFL students (who belong to the generation of the "digital natives") are affected by the appropriation of digital artifacts, but the participants themselves. This assumption, which is inferred from the present findings, feeds into Vygotskian (1978) thoughts concerning mediation, which is embedded in socio-cultural and historical situations that underlie human activity. Following Vygotsky (2012), digital artifacts associated with iPads, SmartBoards, and YouTube could be seen as the tools that mediate didactically meaningful actions. Judging from the data illustrated by Figure 1, these actions involve listening, listening and reading concurrently, reading, recording speech, showing illustrations from the e-book as a pre-reading activity, watching, watching as a pre-reading activity, and writing.

Summarising the discussion of RQ 2, it seems possible to argue that the participants refer to iPad-related, SmartBoard-related, and YouTube-related digital artifacts, which they construe discursively in conjunction with a varied array of instrumental references. For instance, YouTube-related digital artifacts are used according to the participants' linguo-didactic needs in listening and watching when teaching the aspects of grammar and phonetics (see Table 2), whereas YouTube-related digital artifacts that are employed in teaching children's literature YouTube are associated with watching films as a pre-reading activity. It could be assumed that the participants have appropriated a number of digital artifacts that are typical of their socio-cultural and historical situations to such an extent that they exhibit their multipurpose use in accordance with the linguo-didactic situation at hand.

4. Conclusions

The article introduced and discussed a study on discursive constructions of digital artifacts that were identified in the corpus of academic essays written by a group of participants, who were in-service primary school EFL teachers in Norway. The results of the analysis of the participants' essays indicated that they construed a set of iPad-related, SmartBoard-related and YouTube-related digital artifacts. It followed from the participants' discursive constructions of digital artifacts that YouTube-related digital artifacts were preferred by the participants in the teaching of English grammar and phonetics, whereas SmartBoard-related digital artifacts were mostly referred to in the context of children's literature in English.

It was established in the study that the participants' discursive constructions of digital artifacts were marked by the presence of a variety of instrumental references that were found to be determined by the relevant linguo-didactic considerations. In particular, the instrumental reference to listening was mentioned by the participants in conjunction with YouTube-related digital artifacts in the teaching of English grammar and phonetics, whilst the instrumental reference to reading was involved in the teaching of children's literature in English by means of using digital artifacts that were iPad-related and SmartBoard-related. It was inferred from the participants' discursive constructions of digital artifacts that their multipurpose use was indicative of the participants' appropriation of digital artifacts as mediators in achieving the necessary linguo-didactic aims.

At the same time, however, it was established that approximately half of the participants had no reference to digital artifacts in their essays and lesson plans. The findings were suggestive of the need to foster the participants' awareness of digital artifacts and their affordances in the EFL teaching and learning in primary school contexts. Arguably, the findings might open an avenue for discussion whether or not the majority of primary school EFL teachers in Norway employed digital artifacts in their typical teaching routines.

In summary, the findings in the present study could contribute to formulating the following linguo-didactic implications that could be relevant in the EFL contexts in primary school in Norway and, hopefully, beyond. First, it could be summarised that digital artifacts should be regarded as a natural part of the EFL teaching routines in Norwegian primary schools, given that the in-service EFL teachers in the present study construed them in a neutral manner without emotive lexical items and used no specific instructions to the students on how to use them. Second, another linguo-didactic implication that could be drawn from the findings could point to an observation that digital artifacts were found to be associated with the use of iPads, SmartBoards and YouTube only. In light of the findings, it appeared possible to suggest that primary school EFL teachers' digital practices should be broadened, so that they could adopt a more varied and, perhaps, more sophisticated range of digital artifacts that would be suited to their EFL teaching experiences. Hopefully, an extended repertoire of digital artifacts would foster EFL teachers' competencies and didactic approaches.

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References

Albano, Giovannina, Umberto Dello Iacono, and Maria Mariotti. 2021. "An e-Learning Innovative Approach for Mathematical Argumentative Thinking". *The International Journal for Technology in Mathematics Education 28*(1): 3–14, https://doi.org/10.1564/tme_v28.4.01.

Andreeva, Ekaterina and Lukinykh, Yulia. 2021. "Gaming ICT-Based Technologies in Foreign Language Lessons in Primary School: Pros and Cons" in *Teaching Foreign Languages in Professional Context: Traditions, Innovations and Prospects (In Remembrance of Professor Radislav Milrood).* Natalya Gunina (Ed.). Tambov: Tambov State Technical University Press, pp. 96-101.

Bader, Monika, Sara Hoem Iversen and Tony Burner. 2021. "Students' Perceptions and Use of a New Digital Tool in Teacher Education". *Nordic Journal of Digital Literacy 16*(01): 21-33, https://doi.org/10.18261/issn.1891-943x-2021-01-03.

Becker, Sara and Daniel Otto. 2019. "Digital Learning and Sustainable Development". In *Encyclopedia of Sustainability in Higher Education*. Walter Leal Filho (Ed.). Cham: Springer, pp. 399-408.

Buttny, Richard. 2012. *Talking Problems: Studies of Discursive Construction*. Albany: State University of New York Press.

Coburn, James. 2016. *The Professional Development of English Language Teachers Investigating the Design and Impact of a National In-Service EFL Teacher Education Course*. Unpublished PhD Thesis, online https://brage.inn.no/inn-xmlui/handle/11250/2420139 [2022, April 4].

Cozma, Mihaela. 2015. "The Challenge of Teaching English to Adult Learners in Today's World". *Procedia-Social and Behavioral Sciences 197*: 1209-1214. https://doi.org/10.1016/j.sbspro.2015.07.380.

Daniels, Harry. 2016. *Vygotsky and Pedagogy: Classic Edition*. New York: Routledge.

Erstad, Ola. 2002. "Norwegian Students Using Digital Artifacts in Project-Based Learning". *Journal of Computer Assisted Learning* 18(4): 427-437.

Evans, Chris and Robertson, Wenquan. 2020. "The Four Phases of the Digital Natives Debate". *Human Behavior and Emerging Technologies 2*(3): 269-277. https://doi.org/10.1002/hbe2.196.

Fernyhough, Charles. 2008. "Getting Vygotskian about Theory of Mind: Mediation, Dialogue, and the Development of Social Understanding". *Developmental Review 28*(2): 225-262.

Goşa, Codruţa Maria Cornelia and Mureşan, Valentina Carina. 2021. "Exploring Online Teaching and Learning. A Case Study." *Romanian Journal of English Studies* 18(1): 88-97, https://doi.org/10.1515/rjes-2021-0010.

Goşa, Codruţa Maria Cornelia and Mureşan, Valentina Carina. 2020. "Exploring the Attitudes of Philology Students Concerning the Use of Digital Resources. A Case Study". *Romanian Journal of English Studies* 17(1): 91-99, https://doi.org/10.1515/rjes-2020-0011.

Howard, Patrick. 2019. "Re-Visioning Teacher Education for Sustainability in Atlantic Canada" in *Environmental and Sustainability Education in Teacher Education.* Douglas D. Karrow and Maurice DiGiuseppe (Eds.). Cham: Springer, pp. 179-191

Huong, Le Pham and Bui Phu Hung. 2021. "Mediation of Digital Tools in English Learning". *LEARN Journal: Language Education and Acquisition Research Network 14*(2): 512-528, https://so04.tci-thaijo.org/index.php/LEARN/index.

IBM. 2011. *IBM SPSS Statistics for Windows, version 20.0.* New York: IBM Corp.

Jic, Alexandra. 2016. "Young English Learners in the Digital Age" in *Language in the Digital Era. Challenges and Perspectives*." Daniel Dejica, Gyde Hansen, Peter Sandrini and Iulia Para (Eds.). Warsaw/Berlin: De Gruyter, pp.201-213.

Jones, Chris. 2011. "Students, the Net Generation, and Digital Natives: Accounting for Educational Change" in *Deconstructing Digital Natives*: *Young People, Technology, and the New Literacies*. Michael Thomas (Ed.) New York: Routledge, pp. 30-46.

Kapranov, Oleksandr. 2022. "Discursive Representations of Digital Artifacts in an EFL Classroom: Analysing Discursive Voices of Pre-Service Teachers of English". *Ilha do Desterro 74*: 205-225.

Kapranov, Oleksandr. 2020. "English Goes Digital: Framing Pre-Service Teachers' Perceptions of a Learning Management System in Their EFL Studies". *Explorations in English Language and Linguistics 8*(1): 47-67, https://doi.org/10.2478/exell-2020-0013.

Kervin, Lisa. 2016. "Powerful and playful literacy learning with digital technologies". *Australian Journal of Language and Literacy 39*(1): 64-73, https://ro.uow.edu.au/sspapers/2879.

Kessler, Greg. 2013. "Teaching ESL/EFL in a World of Social Media, Mash-Ups, and Hyper-Collaboration". *TESOL Journal 4*(4): 615-632.

KhosraviNik, Majid, Michał Krzyżanowski and Ruth Wodak. 2012. "Dynamics of Representation in Discourse: Immigrants in the British Press" in *Migrations: Interdisciplinary Perspectives*. Michi Messer, Renee Schroeder, and Ruth Wodak (Eds.) Vienna: Springer, pp. 283-295. https://doi.org/10.1007/978-3-7091-0950-2_26.

Kolb, Annika. 2021. "Digital Teaching and Learning in the Primary EFL Classroom" in *Digital Teaching and Learning: Perspectives for English Language Education.* Christiane Lütge and Thorsten Merse (Eds.) Tübingen: Narr Francke Attempto Verlag, pp.125-142.

Koufopoulou, Panagiota and Karagianni, Evangelia. 2021. "Greek Teachers' Beliefs on the Use of Games in the EFL Classroom". *Innovations and Trends in Early Foreign Language Context 11*(1): 220-237.

Krulatz, Anna, Tove Steen-Olsen and Eivind Torgersen. 2018. "Towards Critical Cultural and Linguistic Awareness in Language Classrooms in Norway: Fostering Respect for Diversity through Identity Texts". *Language Teaching Research 22*(5): 552-569, https://doi.org/10.1177/1362168817718572.

Krumsvik, Rune Johan. 2020. "Home Schooling, Remote Teaching and Digital Bildung in Societal Crisis". *Nordic Journal of Digital Literacy 15*(02): 71-85, https://doi.org/10.18261/issn.1891-943x-2020-02-01.

Lee, Allen S., Manoj Thomas, and Richard L. Baskerville. 2015. "Going Back to Basics in Design Science: From the Information Technology Artifact to the Information Systems Artifact". *Information Systems Journal* 25(1): 5-21, https://doi.org/10.1111/isj.12054.

Lindeman, Sofie, Maria Svensson and Ann-Britt Enochsson. 2021. "Digitalisation in Early Childhood Education: A Domestication Theoretical Perspective on Teachers' Experiences". *Education and Information Technologies* 26(4): 4879-4903, https://doi.org/10.1007/s10639-021-10501-7.

Lund, Andreas and Aagaard, Torild. 2020. "Digitalization of Teacher Education: Are We Prepared for Epistemic Change?". *Nordic Journal of Comparative and International Education 4*(3): 56-71, https://doi.org/10.7577/njcie.3751.

Lund, Andreas, Anniken Furberg and Greta Gudmundsdottir. 2019. "Expanding and Embedding Digital Literacies: Transformative Agency in Education". *Media and Communication 7*(2): 47-58, https://doi.org/10.17645/mac.v7i2.1880.

Markula, Pirkko and Silk, Michael. 2011. *Qualitative Research for Physical Culture*. Basingstoke/New York: Palgrave.

Örtegren, Alex. 2022. "Digital Citizenship and Professional Digital Competence — Swedish Subject Teacher Education in a Postdigital Era". *Postdigital Science and Education* 4: 467–493, https://doi.org/10.1007/s42438-022-00291-7.

Ou-sekou, Youssef, Fatiha Kaddari and Abdelkarim Zaid. 2021. "Characterizing the Digital Culture of Prospective Primary School Teachers". *Education Research International* 1-13, https://doi.org/10.1155/2021/9968216.

Pastor, María Dolores García. 2018. "Learner Identity in EFL: An Analysis of Digital Texts of Identity in Higher Education". *Digital Education Review* 33: 55-76.

Prensky, Marc. 2001. Digital Natives, Digital Immigrants: Part 1. *On the Horizon* 9(5): 1–6. https://doi.org/10.1108/10748120110424816.

Presseisen, Barbara and Kozulin, Alex. 1992. *Mediated learning — The Contributions of Vygotsky and Feuerstein in Theory and Practice.* Paper presented at the meeting of the American Educational Research Association. San Francisco, CA, online: https://files.eric.ed.gov/fulltext/ED347202.pdf, [2022, April 4].

Radin, Jasmina. 2017. "Mobile Assisted Language Learning". *Buletinul Stiintific al Universitatii Politehnica din Timisoara, Seria Limbi Moderne* 16: 79-92.

Reisigl, Martin and Wodak, Ruth. 2009. "The Discourse-Historical Approach (DHA)" in *Methods of Critical Discourse Analysis*. 2nd edn. Ruth Wodak and Michael Meyer (Eds.) London: Sage, p. 87–121.

Ritella, Gioseppe and Hakkarainen, Kai. 2012. "Instrumental Genesis in Technology-Mediated Learning: From Double Stimulation to Expansive Knowledge Practices". *International Journal of Computer-Supported Collaborative Learning 7*(2): 239-258, https://doi.org/10.1007/s11412-012-9144-1.

Sapogova, Elena. 2005. "Autobiographical Narrative in the Context of Cultural-Historical Psychology". *Cultural-Historical Psychology 1*(2): 63-74.

Soler Pardo, Betlem. 2014. "Digital Storytelling: A Case Study of the Creation, and Narration of a Story by EFL Learners". *Digital Education Review 26*: 74-84.

Song, Yamjie and Ma, Qing. 2021. "Affordances of a Mobile Learner-Generated Tool for Pupils' English as a Second Language Vocabulary Learning: An Ecological Perspective". *British Journal of Educational Technology 52*(2): 858-878, https://doi.org/10.1111/bjet.13037.

Subero, David, Mariona Llopart, Carina Siqués and Moises Esteban-Guitart. 2018. "The Mediation of Teaching and Learning Processes through Identity Artefacts. A Vygotskian perspective". *Oxford Review of Education 44*(2): 156-170. https://doi.org/10.1080/03054985.2017.1352501.

Tømte, Cathrine Edelhard and Gjerustad, Cay. 2020. "Online or Offline – Does It Matter?". *Nordic Journal of Digital Literacy 15*(04): 259-273, https://doi.org/10.18261/issn.1891-943x-2020-04-04.

Vygotsky, Lev Semenovich. 2012. *The Collected works of L.S. Vygotsky: Scientific Legacy*. Robert Riebert (Ed.). New York: Springer Science & Business Media.

Vygotsky, Lev Semenovich. 1981. "The Instrumental Method in Psychology". *The Concept of Activity in Soviet Psychology 2*(3): 135-143.

Vygotsky, Lev Semenovich. 1978. *Mind in Society: The Development of Higher Psychological Processes.* Harvard University Press.

Wodak, Ruth. 2012. "Language, Power and Identity". *Language Teaching* 45(2): 215-233, https://doi.org/10.1017/S0261444811000048.

Wodak, Ruth. 2009. *Discursive Construction of National Identity*. Edinburgh: Edinburgh University Press.

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